

# The Mining Journal,

## RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1495.—VOL. XXXIV.

London, Saturday, April 16, 1864.

(WITH STAMPED SIXPENCE.  
(SUPPLEMENT) { UNSTAMPED. FIVEPENCE.

MR. JAMES CROFTS, SHAREBROKER,

No. 1, FINCH LANE, CORNHILL.

Mr. Crofts transacts business, in the way of PURCHASE OR SALE, in every description of stocks, but particularly in BRITISH MINES, in no case departing from the position of a broker, at net prices. All orders meet with the utmost punctuality and skill, and advice given as to the nature and eligibility of INVESTMENTS, when required.

Mr. Crofts, from a lengthened experience of the Mining Market, is competent to advise as to the merits of any mine, and the desirability of buying, selling, or exchanging shares. To the latter department he devotes particular attention.

FOR SALE.—5 Brynd Hau.

BUYER OF Central Minera and Bedol-Aur, and 250 North Robert shares.

MR. JAMES LANE, No. 44, THREADNEEDLE STREET, LONDON, E.C.

JAMES LANE has FOR SALE at nett prices:—10 Arthur, 7s. 6d.; 20 Buller and Bassett, 4s.; 50 Crebior, 100 Calstock Consols, 7s. 6d.; 20 Drake Walls, 3s.; 50 East Jane, 4s.; 20 East Corn Brea, 27s.; 25 Great Wheal Busy; 45 Grambler and St. Asby, 29s.; 5 Great Fortune, £17.; 40 Hartley, 30s.; 50 Kelly Bray, 7s. 6d.; 50 Moland, 3s.; 5 Turbier, 23s.; 20 New Wheal Martha, 22s. 6d.; 20 New Birch Tor, and Vitter, 4s.; 50 New Wheal Rose, 15s. 6d.; 20 North Treskerby; 3 South Frances; 50 St. Just Consol., 17s. 6d.; 50 St. Day United, 4s.; 35 Trelawny, £24.; 35 Hearle, 4s.; 5 Vigras and Clogau, £26.; 50 Vale of Towy, 3s. 3d.

PETER WATSON'S WEEKLY MINING CIRCULAR AND SHARE LIST, published every Friday, price 6d. each copy, forwarded on application. This Circular contains weekly important information with respect to all the capital dividend and progressive mines in Devon and Cornwall.

79, Old Broad-street, London, E.C.

STOCK AND SHAREDEALER.—MR. PETER WATSON, ENGLISH AND FOREIGN STOCK, SHARE, AND MINING OFFICES, 79, OLD BROAD-STREET, LONDON, E.C.

TELEGRAPHIC MESSAGES TO BUY OR SELL Railway, Bank, Mine, and other shares and stocks, punctually attended to on commission, or at nett prices for cash, or for fortnightly settlements, with advice as to purchases or sales.

Nineteen years' experience.

(Two in Cornwall and Seventeen in London.)

Bankers: Union Bank of London, and the Alliance Bank of London and Liverpool.

Every information can be obtained on personal application or by letter, as to purchases and sales of mine and other shares, and the best investment for capital.

From the close proximity of his Offices to the Stock Exchange, as well as the Mining Exchange, Peter Watson is enabled to act with promptitude on all orders entrusted to him, which at all times are carried out with punctuality, and to the best advantage of his clients.—April 15, 1864.

MR. LELEAN, STOCK AND SHAREDEALER, 11, ROYAL EXCHANGE, LONDON, E.C.

Shares bought and sold on the usual commission. Telegraphic messages promptly attended to. Mines inspected, and reliable information given. Established 15 years.

FOR SALE.—50 Brittany Silver-Lead shares, at 36s. 6d.

BUYER OF Wheal Crebior, Great Laxey, Great Vor, Tolvaddon, Providence, and Wheal Rose.

I strongly advise the immediate purchase of Great South Chiverton shares, as there is ample capital provided for working the mine for twelve months. The prospectus and reports, which appear in another column, are worthy of a careful perusal. Price this day, £2 12s. 6d. Bankers: Roberts, Lubbock, and Co.

RICHARD CLIFT, MINE SHAREDEALER, late of Redruth, now 48, THREADNEEDLE-STREET, LONDON, where all letters are to be addressed.

JOSEPH GREGORY, STOCK AND SHAREBROKER, 2, HATTON COURT, THREADNEEDLE STREET, LONDON, E.C.

Commission on purchase and sale of mining shares, 1 1/4 per cent.

Bankers: City Bank.

THOMAS HAMILTON (late of Truro), STOCK AND SHAREBROKER, 4, AUSTINFRIARS, OLD BROAD STREET, LONDON, E.C.

Mine shares bought and sold on the usual commission.

MINING SHARES FOR SALE:—5 Clifford, £34 1/2%; 5 Nanglais, £32%; 20 East W. Russell, £1 1/2%; 10 E. Caron, £31.; 5 Stray Park, £33%; 20 North Crofty, £47%; 5 Gt. Wh. Fortune, £416; 20 North Treskerby, £3 1/2%; 100 Vale of Towy, 6s.; 10 Gt. Wh. Vor, £34 1/2%; 50 St. Day, 3s.; 1 Caron Brea, £27 1/2%.

WHEAL ROSE.—They have now cut into the lode 12 ft., the last 2 ft. being richer than my part previously cut through, and may fairly be valued at from £150 to £200 per fm.; the lode being easy for driving, rapid progress will be made in opening out the 80 east and west, which will soon lay open large reserves of ore. The sump-whim shaft, which is only a few yards north of the engine-shaft, will now be continued on the course of the lode from the 70 to the 80, and will soon be prepared to discharge a large quantity of ore, which must necessarily come away from the roof of the 80. The 70 has now been driven nearly 100 fathoms in a confined course of ore, the extreme ends being still very rich, worth from £40 to £50 per fm., in easy ground, and the ore has every appearance of being the top or chimney of an immense deposit of ore, and very similar to the Great Consolidated and United Mines of Gwennap at their shallow levels. The 70 is being driven in the direction of Hallensieg, which mine is being rapidly drained by the cutting of the lode at the 80 in Wheal Rose. This must augur well for Hallensieg, and we may not be surprised any day to hear of a similar course of ore in this mine. I say shares should be secured at the present low price.

Apply to Wm. Michell, 42, Cornhill, London, E.C.

GEORGE RICE, SHAREBROKER, 5, COWPER'S COURT, BIRCHIN LANE, LONDON, (21 years' experience), has SPECIAL BUSINESS, BUYER OR SELLER, for cash or account, in the following mines:—

Closing quotations.

Chiverton ..... £12 1/2—12 1/2  
Clifford Amalgamated ..... 34—34 1/2  
Devon & Bedford (Colchar) ..... 5%—5% per cent.  
East Lovell ..... 16—16 1/2  
Great Rosewarne ..... 26—27  
St. Day ..... 30 1/2—30 1/2  
St. Day Russell ..... 4—4 1/2  
East Corn Brea ..... 65—7  
East Grenville ..... 4—4 1/2  
Great Wh. Vor ..... 32—34  
Hington Down ..... 28—30  
Marks Valley ..... 4—5  
East Lovell.—SPECIAL business at close prices, and advice when to buy or sell.

WHEAL GREENVILLE.—In reply to numerous enquirers I beg to state that this mine has been a great "success" in the market, and the price of shares in consequence has rapidly risen from £2 to £11 1/2. There may be a further rise next week, when I recommend my clients to act upon the good old policy, "to sell always upon a great rise," and thus secure good profits before there is another fall in price.

East Grenville at £4 1/2, South Grenville at 10s.—I expect a great rise in price for these shares, and strongly recommend purchase forthwith. These mines adjoin Wheal Grenville. The next call in East Grenville will not be more than the expected call in Wheal Grenville.

Money advanced on mining shares.

Bankers: Bank of London.

MR. J. P. ENDEAN, STOCK AND SHAREBROKER, 1, CROWN COURT, OLD BROAD STREET, LONDON, E.C.

Having had 25 years' experience in the mining districts of Devon and Cornwall, and in the London market, with daily information of important changes from qualified agents, also the most authentic reports relating to other investments, he is in a position to afford the earliest information to his clients, and to direct capitalists whether to buy or sell in mines, railways, or other securities.

Investors should apply to him for reliable information relative to the Chiverton Mines, also the Camborne and Illogan districts.

A carefully selected list of sound progressive and dividend shares (certain to give a large percentage immediately) on receipt of 5s. in stamps.

Orders and telegrams receive immediate attention.

MR. GEORGE BUDGE, SHAREBROKER, No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C. (Established 17 years), has FOR SALE at nett prices:—10 Prosper United, 25 1/2 Sithney Wheal Metal, £5 1/2; 35 Treloewy, £100; 20 North Crofty, £25 1/2; 100 Wheal Hartley, 27s. 6d.; 30 Caron Hill, 15s.; 60 East Wheal Vor, 5 1/2; 25 East Russell, £2 1/2; 25 United Mexican, £7; 50 East Treskerby, £3 1/2; 200 Vale of Towy, 6s.; 30 Wheal Pollard, 5s.; 20 Chiverton Valley; 100 Garg., 6s. 150 East Seton, 7s.; 1 West Sharp Tor; 50 Okel Tor, £2 1/2; 50 Bedol-Aur, 8s.; 100 West Treverseyan; 5 New Devon Consols; 50 Vallanzasen; 150 Santa Barbara, 11s.; 85 North Minera (Preference), 9s. 6d.; 15 Great Wheal Vor; 200 Anglor. Brazilian, 5s.; 100 Don Pedro, 15s. 6d.; 100 South Grenville, 15s.; 50 Dale, 12s. 6d.; 10 Great Wheal Vor; 20 Great North Down; 2 Wheal Buller, £37; 150 East Clogau (fully paid), 4s.; 20 Great Laxey; 50 North Shepherds.

GEORGE MOORE,  
1, CROWN COURT, THREADNEEDLE STREET.

In any business that George Moore is favoured with, in which he is the buyer, he will give CASH ON RECEIPT OF TRANSFER.

JAMES HERRON has FOR SALE the following SHARES, at the prices quoted, and FREE OF COMMISSION:—

50 Alamillos, 17s. 6d. 5 Great Fortune, £16. 10 So. Caron Brea, £1 1/2. 20 So. Caron Hooper (an offer wanted). 50 Santa Barbara, 10s. 9d.

1 Bryn Gwlog, £33 1/2. 100 Gt. New Copper, 1s. 20 St. Just United, £2. 50 St. Just the Rey.

50 Bedol-Aur, 25s. 25 Great Retalack, 5s. 50 St. John the Rey.

1 Buller, £26. 10 Great Laxey, £6 18s. 9d. 50 St. John the Rey.

50 Billins, £17. 25 Gurin (offer wanted). 50 St. John the Rey.

10 Caron Vale, £3 18s. 9d. 100 Garry (all cl. pd.), 4s 9d. 50 St. Sithney Metal, £5 1/2 9d.

50 Chiverton, 22s. 6d. 20 Gonamena, £3 18s. 9d. 50 St. Sithney Metal, £5 1/2 9d.

50 Chiverton, £13 1/2. 25 Gurin (offer wanted). 50 St. Sithney Metal, £5 1/2 9d.

50 Chiverton, 22s. 6d. 25 Gurin (offer wanted). 50 St. Sithney Metal, £5 1/2 9d.

50 Chiverton, £13 1/2. 25 Gurin (offer wanted). 50 St. Sithney Metal, £5 1/2 9d.

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## Original Correspondence.

## THE NEW GEOLOGICAL SPECULATIONS, AND THE MANCHESTER GEOLOGICAL SOCIETY.

SIR.—As silence on my part might be supposed to be assent to the assertions cast by some of your correspondents upon the views which I have promulgated in my paper upon Modern and Scriptural Geology, will you allow me a few closing words, to say that neither the facts which I have advanced, nor the anomalies which I have shown of many of the current geological theories, have been in any way damaged or even encountered; and that the letter of Mr. John Atkinson (of Thelwall), although written by him "as one of the honorary secretaries of the Manchester Geological Society," and addressed from the society's rooms, at the "Museum, Peter-street, Manchester," and which might, therefore, be taken as an official communication, was written upon his own responsibility, and not authorised by the society. I was prepared at the outset for a fair amount of opposition, but the personalities and sneers, and the attempt there has been to smother and hoot down the expression of my fair opinions, have far surpassed what I had anticipated, and, in some respects, there has been actual rudeness, as though an evil spirit had taken possession. Mr. Binney and Mr. Atkinson have apparently left nothing undone to prevent the paper being in any way recognised. Even the reporters who attend the meetings were, I am well informed, requested (Mr. Atkinson being foremost) to omit the usual notice with which they favour the society in the newspapers, being an interference with their impartiality and independence which during the years that I was the acting honorary secretary and president was never attempted, and which, I am happy to find, was on this occasion not acceded to by the reporter for one independent newspaper, whose report was taken at the meeting, and which has formed the basis upon which the discussion has been founded. My paper, as published, is substantially the same as that read at the meeting, there being only such verbal alterations and a transposition, as will often occur and be found requisite when manuscript has to be prepared at intervals, as space and time can be found. My thanks are due to Mr. H. Rhys for the support he has brought to bear in regard to the larger area which the Silurian rocks must have covered when flat to that which they now occupy; and also to Mr. Ennor for the timely repetition of the views he has so long advocated. I could myself have extended my own views to greater length in some minute but important points, such as the bending and alteration in the direction of the cleavage at some of the faults in the strata; but especially in showing that the current views as to the formation of rocks and the contour given by supposed denudation, cannot be correct without believing that the formation of all the principal faults did not commence until the whole of each division or group of conformable strata was deposited, and that the formation of faults has ceased since the supposed denudation took place. This, in itself, is sufficient to stagger belief in the current theories; but, as with several of the other points, it is conveniently ignored.

The commotion which my paper has excited amongst what may be called superficial or fashionable geologists, shows how uncertain must be the data upon which they have put away the current conclusions as settled. I well remember on one occasion, about ten years ago, showing to Mr. Binney a piece of impure ironstone, which I had taken from the lower series of the Lancashire coal field, and asking him where it belonged. He said, "From not above the 40-yard mine," which is in the lower series. I said, testingly, to him, "What do you say to its being from above the black and white coal?" which is in the middle series. He replied, pointing to the well-known Goniatite, *Aviculapecten*, &c., fossils, which so markedly characterise that part of the lower series, "If that be so, then the experience of a lifetime is thrown away." This made a great impression upon me at the time, and I have myself since helped to give currency to the diagnostic value of these fossils. But both Mr. Binney and myself have now lived to find these fossils are not confined to below the 40-yard mine, and that now they are, upon the authority of the officers of the Geological Survey, acknowledged to extend not only to an high a point as my question indicated, but higher still, almost at the top of the middle series, nearly 1500 yards higher up in the strata than Mr. Binney then indicated as the limit. His lifetime experience, great as it was, has, therefore, on this point been thrown away, and many of the current geological theories are based upon no better foundation. I have calmly and temperately pointed out the principal current theories which, upon long experience, I find to be irreconcileable with observed facts, and I have shown how the observed facts are reconcileable with the oldest and highest authority of all; and I now leave the subject to germinate, feeling sure that the present current theories do not deserve to be recognised if they will not stand the test of a critical examination.

JOSEPH DICKINSON.  
Pendleton, Manchester, April 14.

## PATENT OFFICE AND LIBRARY.

SIR.—Whatever may be thought of an Inventors' Association for procuring a site and buildings for a Patent Office and Library, every one at all interested in the matter must so far sympathise with the object of the Association as to desire to quicken the movements of the Commissioners of the Treasury, and also to wish to procure suitable accommodation on a site as near as can be to Lincoln's Inn. Ever since Oct. 1, 1852, it has been "Lawful for the Commissioners of Her Majesty's Treasury to provide and appoint from time to time proper places or buildings for an office or offices for the purposes of this Act," the Patent Law Amendment Act, 1852. In 1853 the present offices were procured on payment of rent to the Suitors' Fund of the Court of Chancery, but "This arrangement was not considered to be permanent," neither is the accommodation at all adequate to the purposes of the Patent Commissioners. In July, 1862, a memorial was presented to the Commissioners of Patents urging the provision of suitable offices, library, and reading rooms as a matter calling for immediate attention. And the prayer of this memorial was acceded to by the Commissioners of Patents in their report, dated Aug. 7, 1862. But the misfortune was that this report was encumbered with a recommendation that the Patent Office, Library, and Museum should all be in the same place, or at least contiguous. And this created a difficulty as to the necessary site for the building or buildings, and nullified the whole proceeding. Now, the important point to urge upon the Commissioners of Her Majesty's Treasury is that there is no necessity whatever to have the Patent Museum contiguous to the Patent Office and Library. The two Institutions are quite distinct in their practical uses. Even if it were possible to accomplish by means of the Museum the educational results for the benefit of skilled workmen, which form the ground of the recommendation, this would be no reason for placing the Museum in close contiguity with the Patent Office and Library. But my conviction is that what is set forth in the report as a probable result of the working of the Museum would never be realised, and that the outlay occasioned by the attempt to make it so would be enormous. Let persons interested in patents, then, keep the two Institutions distinct in their own minds, and confine their efforts to the procuring of a suitable Patent Office and Library from the Commissioners of the Treasury as near as they can to Lincoln's Inn, and with as little delay as possible.

WILLIAM SPENCE, Assoc. Inst. C.E.

50, Chancery-lane, W.C., April 11.

## THE CROWAN DISTRICT—No. 1.

SIR.—It frequently occurs in mining that when an adventure, which has for years been working itself up to prosperity, becomes suddenly prominent, the mining world is astonished that they did not earlier perceive its value, are immediately possessed by an intense desire to procure shares in adjacent sets, which spring up with proportionate rapidity, and forthwith a fashionable district is inaugurated. Now, this is not to be altogether reprobated, as in a highly mineralised county like Cornwall some good mines seem certain to result, and discoveries greatly advantageous to the neighbourhood necessarily occur. One great evil, however, naturally accruing from the investment of so much capital in one district, is the entire neglect which valuable and highly-mineralised parishes receive, and which, it should be known, present far greater economic facilities. During my late labours amongst the Crowan and Gwinear Mines this most forcibly impressed me. Although generally acquainted with the mines in the district, I had never carefully studied its geological features, and, consequently, was not sufficiently aware of its wonderful capabilities for yielding ores of metals. Since completing my geological survey, and more especially seeing the principal features clearly delineated before me in the map and sections prepared, I remain firmly convinced that these districts are but superficially mined, and that here there will be at some future period a mining focus second only to that of the Camborne and Illogan. A very superficial glance at the maps prepared will show that in no portion of the

county have more shafts been sunk, or the lodes more opened on at shallow depths; indeed, nearly the whole of the lodes have made profits at shallow depths, while those that have been effectually proved in depth have been still more productive.

This is well exemplified in the fact that Great Wheal Abraham, the only really deep mine in the district, returned 2,000,000/. The linear courses of the lodes continue for greater distances, and are more clearly defined than in any district with which I am acquainted; while the backs produce ores of metals, in many instances to grass.

I write this in haste, but shall return to the subject, and shall give a short geological description, with some remarks on prominent mines, and shall also indicate those which I think deserve to be reworked. I leave to-night to visit some mines in this district, and shall from them send you a few more lines on the Crowan district. It affords me much satisfaction to see the energetic progress of the Wheal Abraham Mines, as I have no doubt that the starting of several of the surrounding and prematurely abandoned mines will be the sequence of the opening up of these large and valuable mines.

The Crowan district immediately adjoins that of the Wheal Vor, and I do not think it is generally known that the Wheal Vor cross-course intersects Crowan, subsequently passing through Wheal Tremayne and the Alfreys in its course to the north coast.

BRENTON SYMONS.

18, Hatton-garden, E.C.

## CORNISH PREJUDICES—DEVON COPPER MINE.

SIR.—Your Truro Correspondent, in his "Report from Cornwall and Devon," last week, ventures to make assertions with regard to lodes about Dartmoor which seem to be of rather a sweeping nature. He states that the finest looking lodes at surface in and around Dartmoor invariably lead to nothing. Now, Sir, there is a mine called Devon Copper Mine, in which many of your readers are deeply interested, some as adventurers and others as true miners, taking an interest in all that is going forward, especially in the development of districts almost untried. This mine is situated on Dartmoor, about three miles from Okehampton, and is opening in splendid style; in fact, now that the wheel and other machinery are fairly started, and the operations can proceed unchecked, it is the opinion of most experienced persons that discoveries of a very important nature will probably be met with at no great distance from the present workings. The lode at present in course of development being from 18 to 24 ft. in width, most kindly throughout, and already producing good stones of ore, with plenty of mundic and everyting else that a miner likes to see, it is evident that should it run into regular deposits of ore an extraordinary mine will be at once opened. When reading the remarks of your Truro Correspondent we must not forget that strong prejudices has ever existed with regard to the production of ores eastward of certain limits. These limits were originally laid down in Cornwall, but the steady progress of mining discoveries to the eastward, including Devon Consols itself, has proved the utter fallacy of such a theory, and, unless our greatest miners are much deceived, the development of Devon Copper Mine will complete an advance still further to the east. The fact is, very few attempts have been yet made to test the mineral treasures around Dartmoor. Does your correspondent mean to include in his too hasty statement the Old Wheal Friendship, which is situated close to Dartmoor, is 200 fms. deep, has been worked men a century, has paid hundreds of thousands in dividends, and is still looking well?—April 13.

EASTWARD HO!

## EAST WHEAL VOR MINE.

SIR.—All who have a love for mining, either as a science or a speculation, will be truly glad to find that this mine is now being vigorously worked, and must cordially wish the parties who have gone into it so energetically all the success they can desire. The prospectus has been criticised as too glowing; now, I know the district and the mine well, and I think, if anything, the prospectus is less favourable and less glowing than the truth amply justifies, for I am sure it only requires patience and perseverance for this mine to rival its rich neighbour, Great Wheal Vor. The features of the adventure are most remarkable—nay, unexampled—there being no less than five important points, besides minor ones, to come off, three of which will come off in a few months—viz., driving the 60 fm. level east, and worth 40/- per fm. for 30 fms. long; driving the 60 west, under another shoot of profitable tin gone down in the bottom of the 60 west for 20 fms. long—both which shoots in the 50 fm. level produced 10,371/- worth of tin; and the cutting of Smith's lode at the 60 fm. level. This lode, although a fine masterly lode, and equally as promising as the Bramble lode, has not been seen below the 30. When any of these points become, as they certainly will, profitably productive, shares will go to 10/- each, or upwards, immediately. A fourth point, of great importance, is the junction of Bramble and Smith's lodes, as well as several branches intersected in a cross-cut at the 50 fm. level, which, from the underlie of the lodes and branches, may be expected to take place about the 100 fm. level; such a junction in this district infallibly occasions a large deposit of tin. A fifth point, and the greatest prize of all in the idea of some parties, is the exploration of the Great Wheal Metal lode, which hitherto has been most inexplicably allowed to remain unworked, except at surface.

I think I have enumerated sufficient to prove that, with a capital of 6000/- in hand, and all the necessary plant on the mine, and in a condition equal to trying and proving the points I have named, the shares are cheaper at 5/- per share, or 30,000/- for the mine, than any other young mine in the market. There are cavaliers who say the price is too high; let them keep their money and advice—I want neither to encourage me in my resolve to hold on the shares I have taken in it, as I have no doubt I shall in a few months be richly rewarded by finding the shares doubled in market value, despite the ominous predictions of the market oracles to the contrary. Look at East Lovell shares; they were 6/- a month or two ago—to-day they are 13/- Did not the "market oracles" and "private advisers" vow they were not worth sixpence a dozen? Where are they now? Mark my words—the "oracles" will also deceive those who act on their "advice" in East Wheal Vor, for they also will be 13/- before Christmas next.

ARGUS OF THE WEST.

P.S.—I am happy to say Great Wheal Vor never looked better than at present, so the declining state of the market can only be attributed to market operations, as the shares are cheap at 60/- each, should their present prospects continue.

## GOLD IN WALES.

SIR.—In the Journal of March 26, I perceive that I have had the misfortune to draw upon myself the censure of an "Englishman in Wales," and what for, I pray?—why, for writing a report upon the Sovereign Gold Mine, a report I believe now, and did believe when I wrote it, correct and true in every particular. I hope an "Englishman in Wales" will not be offended if I tell him that my opinion is he has more than one man's ordinary share of confidence in presuming to elevate himself by criticising what he does not understand. He says he "would not, on any account, undertake to work 200 stamps with their water, if he were restricted to a fall of 240 feet." There is no occasion to be restricted to that fall—he could have three times that fall if he liked; but I should like to know more of him yet before I should consider him a judge of what could be done at all. Because he would not undertake to do a certain thing, I am by no means prepared to admit that no one else could do it. I should have answered his letter last week, but was prevented by indisposition; but I will now take leave of an "Englishman in Wales," by informing him that, however worthless my report may appear, it is, at all events, worth more, if only for waste paper, than I ever succeeded in getting for it.—St. David's Gold Mine.

THOMAS FAUL.

## GOLD IN WALES.

SIR.—In the Journal of April 2, I perceive that the opinions of a correspondent, signing himself a "Welshman in Wales" (which is, by-the-way, a very appropriate name), coincides in nearly every particular with the views expressed in my letter of March 19. This is in itself very satisfactory, as it proves the correctness of the conclusions arrived at by me. He says that "I seem to imagine" Mr. Watson's remarks were quite called for. If he did not thoroughly comprehend my meaning, I will at once set his mind at rest, by again asserting that I do imagine they were called for. He then goes on to say that the whole tenor of my letter was to run down Mr. Nancarrow's report, by insinuating that it was written on too large a scale. There, again, he is right; and I should imagine that others could see that important fact, without his taking the trouble to point it out to them. His next is that he is a Welshman, and he very pointedly says he is in Wales. Why not have said at once what he meant, which is simply this—that he is at home, and he wishes that everyone else were. That being what he means, I most heartily second his wish. He then says that there are too many Englishmen like me in Wales. I can easily believe that; people do not like to hear the truth, if that truth be unpleasant. As to jumping into print, I promise him that another such a fagellation as I have received at his hands will make me jump out again, never to return. The next is one of the points on which I disagree with him. He says that I am "attempting to snub or crush anyone who is likely to do in Wales in gold mining what Englishmen have and are doing elsewhere, in various parts of the world." This is certainly incorrect. I have simply stated facts, and facts, too, which I can uphold against all England and Wales put together. Another reason why it is not at all likely I should attempt to do that is, because the success of gold mining in Wales is to my interest, and I should profit by it, as many hundreds of others would do. His remark that the "coming man is come at last" is, I suppose, in reference to the long time he has taken in coming; of course, with that I have nothing to do. The next sentence or two in his letter has reference to the lodes in the sett with which I am acquainted, and I perfectly concur in everything he has said about them; but I do not concur in his opinion that they justify Mr. Nancarrow's report, my reasons for which I shall presently explain. He answers the question—"What is there in that report so alarming?" This question he answers himself, and expresses my very opinions in his answers, which run as follows:—"1. The present works are designed to deal with 50 tons in 24 hours." This I admit, is not only alarming, but astounding. When one considers that there are only eight heads of stamps to treat that quantity, the conclusions arrived at are perfectly justifiable, and I am very happy to say that a "Welshman in Wales" considers this statement as one of the alarming ones.—2. "That these works will give profits." If they depend upon 8 heads crushing 50 tons per day before they get profits, why, of course, this is another very alarming statement.—3. "At Goetref you have a fine water-power." This I disposed of before very satisfactorily. I admitted they had; but I said they could not make use of it for the present works, which is an indisputable fact, as is sufficiently proved by their now using steam instead of water power.—4. "The views are capable of supplying 150 tons of auriferous ore daily, which quantity can be increased to any extent." This is certainly an alarming statement, and I am very pleased to see that a "Welshman in Wales" holds just the same view of the case as myself. Of course, when the veins are opened sufficiently, and their underground operations are placed upon a scale extensive enough, why then they may obtain 150 tons per day. I could name many mines with which I am acquainted that are raising more material than that, and stamping it, too. At Dolcoath they raise and stamp upwards of 200 tons per day; but we must recollect that this mine is upwards of 200 fms. in depth, and to open out a mine to that extent is not the work of weeks or months—it is the work of years.

The next part of his letter has pained me very much, for, after agreeing with me in almost every particular thus far, he gets into a bad temper, and says I do not know

what I am writing about; but, as I am of a very forgiving disposition, I will not be offended, but will explain what it appears I did not make sufficiently plain in my former letter. I, of course, did not refer to the Hungarian pans being discarded, and I am astonished that a "Welshman" should have failed to perceive to what process I did refer. If he is still in ignorance, he can easily satisfy himself by going to the Welsh Gold Mining Company's Works, and seeing what machinery is there besides the Hungarian pans; and then going to the Vigras and Clogau, and seeing similar machinery, that is, as I said, discarded and lying on the ground in a heap. Having explained that it was to be contradicted will now be quite an unnecessary exertion on his part. A "Welshman" next wishes to know if there is "something out of the way in having 384 men at work?" I answer, No; quite the contrary. In the ground that is opened there would be very much in the way of each other. In conclusion, I have only to say that I most heartily second the wish of a "Welshman" of seeing 384 men, or four times that number even, at work on a gold mine in Wales; but we must have patience. We shall not see that just yet; a mine cannot be opened like a house, by just throwing back the doors. The old adage, "We must crawl before we can run," is true in mining as in everything else. I also coincide with his last, and can say with truth that the success of this mine and also of many others is earnestly desired by every—

ENGLISHMAN IN WALES.

## GOLD IN WALES.

SIR.—In my last letter there is an inaccuracy, the meaning of which is, however, easily understood by those conversant with mining. I refer to the first line in the estimated cost of producing gold quartz: it should be 275 fathoms, and not tons; the totals and results, however, stand the same. I have heard it stated that 4/- per fathom is rather too low a price for the generality of quartz veins, and from all places. Bearing in mind the foundation of those estimates—a capital of 100,000/-, a full and fair proportion of which, it is assumed, has been laid out in establishing the works, in sinking shafts, in driving levels, in erecting every improved machinery for the delivery of large quantities of stuff, and a co-extensive establishment for the reduction and amalgamation of the same, I do not think the estimates are out of the way. The yield of gold is assumed to be of the lowest order, and the selling price of 70/- per oz. Both these items leave a cool margin for any extra arising. Your readers will be glad to know what is being done in the way of reducing the quartz. In the VIGRAS AND CLOGAU, at the present, queen of the Welsh gold mines, the mode was by means of crushing and stamping, and also BENDAN: the latter have been laid aside. "The Little Brittons" have held their way, and are still in use there. Moesheimer's pans were not continued, at least on the large scale once contemplated. The Schemanitz system of Hungarian pans has been in use. These pans are an inexpensive article, and very simple; they have been so recently introduced that not much is said about them just at present.

The CLOGAU MINES have a first-rate staff of officers. None of your "square pegs" in round holes." CAMBRIAN has been rather quiet lately. In the PRINCE OF WALES Mine Captain S. Jones has been busily engaged for some time in erecting works and machinery for barrel amalgamating. We shall see these going very soon. I hope Capt. Jones will succeed in placing a Prince of Wales' plume in his cap. In CEFNOCH there is a extensive field of machinery. "The Little Brittons" do good service there. SMITHS and Hungarian pans seem to be the order of the day. From the latter mine, heard. Up at GWITHYND, as our last Journal informed your readers, most important discoveries of gold have been made. This place must have been a great source of supply of gold for some time below both banks of the Mawddach. There certainly is something bigger than a speck to be found occasionally. I have seen nuggets worked out of the alluvium of the river. They were somewhat water-worn. On again, further ahead, gold has been discovered adjoining CASTELL CARM DOCHAN, and in the latter gold is seen as plainly as copper in the Clogau. These mines are on what I would term the golden belt of Merioneth. The men of Merioneth themselves have at last opened their eyes to the riches surrounding them, and are now extensive holders of shares in several gold mines. Through good report and evil report, the determination now is to work the veins legitimately, trusting to their intrinsic value for ultimate results.

There is now greater anxiety to obtain sets to get rid of them, and, after obtaining them, the keenest search is made for a golden quartz vein. These researches have lately been crowned with success, and there is the greatest faith that there are more than one Clogau to be found. We are not jealous of anyone who deals with them. I am one of those who wish success to every Englishman as my letters testify, and every—

WELSHMAN IN WALES.

SIR.—Messrs. Charles Thomas and Son inspected this mine on Wednesday last, and as various rumours are being circulated as to the nature of their opinion, allow me a brief space to state that the report is of the most favourable character. Messrs. Charles Thomas and Son value the different points of operation upon the tin lode at 200/- per fathom in the aggregate; the reserves of tin ground laid open above the 100 fathom level they estimate at 17,000/- (the ground in the 100 cannot, of course, be valued until the 110 is driven under it); and they state that as soon as the 32 heads of stamps are at work, 20 tons of tin per month are fairly to be returned, at a profit of 500/- or 600/- per month, and should the lode be productive in the 110 and 120 fathom levels, the profits will be greater. As the report only reached me this morning, and is of a lengthy character, I have not time to send a copy for your columns, but a printed copy will be sent to every shareholder in the mine as soon as possible.—13, George-yard, Lombard-street, April 15. JOHN WATSON.

## FOREIGN MINING AND METALLURGY.

With regard to French affairs, we may note that the Carnaux Railway and Mining Company has just held its annual meeting. We may, perhaps, make future reference to the position of the company's undertaking; meanwhile we may note that the accounts presented to the meeting were approved by the proprietors present, and the dividend for 1863 fixed at 14s. 3d. per share; of this sum 7s. 6d. was paid on account of Nov. 1, and the balance will be distributed May 2. The annual general meeting of the Industrial Bank of Paris (Jules Pic et Cie) has also been held during the last few days. The manager read an interesting report, in which he passed in review the various affairs in which the undertaking has embarked, and especially the *Fraternidad* Mine. The state of affairs indicated was considered satisfactory, and a dividend at the rate of 10 per cent. was declared on the capital paid up. We have already noticed the prosperity of the *Bessèges* and *Alais* Railway Company, a concern which depends largely for its success upon the carriage of coal, iron, minerals, &c.; and a few further details may not be unacceptable. The quantity of coal transported by the company in 1863 was 363,621 tons, against 316,816 tons in 1862, showing an increase of 51,805 tons. This augmentation was divided as follows among the various industrial companies which use the line:—The Robiac Company, 21,362 tons; the *Alais* Foundries and Forges Company, 18,454 tons; and the *Bessèges* Foundries and Forges Company, 10,811 tons; the remainder of the increase was contributed by private individuals. As regards the iron and pig conveyed over the line, it may be added that the *Bessèges* Foundries and Forges Company dispatched last year 22,733 tons, against 19,661 tons in 1862, showing an increase of 3073 tons. The *Alais* Foundries and Forges Company dispatched 6450 tons of iron minerals last year, against 3715 tons in 1862, showing an increase of 2735 tons; and the *Bessèges* Forges Company gave last year a report of 22,459 tons, against 1998 tons in 1862, showing an increase of 21,461 tons. The same company commenced the transport of castings in 1863, and 15,240 tons were forwarded. The considerable augmentation in the transport of iron minerals for the *Bessèges* Company is the result of a contract concluded with that company, and by the terms of which the administration of the railway was consented to reduce its tariffs on iron, pig, minerals, and castings. Before these reductions were made, the greater part of the traffic escaped the railway, because land carriage was found to be cheaper. The same cause produced the same effect as regards the transport of castings, of which before the conclusion of the treaty the railway company did not move a single ton. It will be seen that the quantity of minerals and castings carried last year amounted to the important total of 36,701 tons; this movement enabled the products of the *Bessèges* works to be augmented in a notable proportion, so that to the profit resulting to the railway company from the carriage of large quantities of raw materials must be added the advantageous results derived from the transport of manufactured products. A few details with respect to the Aubin works, comprised in the undertaking of the Orleans Railway Company, and conducted by the administration of that great enterprise, may be interesting. In the spring of 1863 the directors expressed a confident opinion that the year would present results superior to those of former corresponding periods, and they now state that they have not been deceived in their anticipations. Thus the last three years have resulted as follows as regards the net profits of coal and iron produced, and the net profits realised:—

Year.	Iron.	Profit.
1861	Tons 192,931	Tons 16,179 £28,145
1862	234,007	17,269 23,835
1863	224,190	19,391 35,152

Comparing the exercise of 1863 with the average of the two previous years, there was an augmentation of 7 to 8 per cent. as regards coal, 16 per cent. as regards iron, and 35 per cent. as regards profit. These results the directors consider satisfactory, as they have been obtained notwithstanding the reduction which the price of rails has undergone of late years and up to within the last few months, while important expenses have been incurred for extensions and improvements, which, according to a scale previously adopted, were entirely replaced within the year. The capital engaged in the works, and for the interest and replacement of which the Orleans Railway Company has to provide, is in round figures 720,000. This considerable total involved a charge in 1863 of 41,3637, and the net profit realised having been 35,1527, a deficit of 6217, had to be made good from the general profits of the railway undertaking. In 1862 the corresponding deficit was 19,2927, and in 1861, 18,2167, so that the burthen which the works have hitherto imposed upon the company has become very greatly alleviated. The current of affairs at St. Dizier is only feebly maintained. If, however, no important transactions present themselves, the aggregate of small affairs provides from day to day for the maintenance of continuous and active working operations. Refining pig, charcoal-made, is quoted at 41. 16s. per ton; quotations are, however, to a great extent, nominal. Rolled irons, first-class, 91. to 97. 4s. per ton, with a scale of 4s. to 8s. per class; sheets, 91. 16s. to 101. first category, with a scale of 12s. 6d. to 16s. per ton between the other categories; special irons, 91. to 97. 4s. per ton, with a scale of 4s. to 8s. per class; hammered irons, 101. 8s. to 101. 12s.; axles, 111. 4s., and machine, No. 20, 91. 12s. per ton. At Marseilles, English pig is quoted at 51. 2s. to 67. per ton. It is announced that the Corps Legislatif is occupied with a bill for abrogating the articles of a law adopted April 20, 1810, which requires a previous authorisation for the establishment of blast-furnaces, forges, and metallurgical works. It is also proposed to abrogate the arrangements of the same law, which, in the case of a mining concession, oblige the concessionnaire to furnish to the ironworks of the neighbourhood the quantity of minerals required for their working; at the same time, the old arrangements would continue to be applicable to works now established up to January 1, 1874. The value of the pig, iron, and steel imported into France during the first two months of the last four years, has been as follows:—

1861.	1862.	1863.	1864.
Pig, £29,800	£121,040	£156,080	£45,200
Iron, 11,520	125,720	69,320	10,600
Steel, 9,960	27,400	17,440	11,440

The high prices prevailing now in England and Belgium will be seen to have had the natural effect of greatly restricting operations this year, as compared with 1863 and 1862, when Mr. Cobden's commercial treaty had developed a special activity.

A royal Belgian decree sanctions the importation with a temporary freedom from import duties of rough foreign pig intended for the fabrication of cast-steel, rough or worked, and intended for exportation. This favour is accorded subject to conditions and formalities to be prescribed by the Minister of Finance. By a ministerial Belgian decree also the arrangements of decrees dated July 21, 1858, and March 31, 1859, are rendered applicable to rough pig intended to be applied to the fabrication of cast-steel rough or worked, and intended for exportation. The decrees of 1858 and 1859 relate to the temporary free importation of rough pig intended for the fabrication of engines and machinery, as well as works and utensils in cast-pig. Among other official acts referring to metallurgy may be mentioned some rejections of applications for concessions of mines, and, on the other hand, the obtention by the Prince and Princess of Capua of the *Verleumont* Mines of manganese, lead, zinc, &c., containing 1748 acres, and situated in the provinces of Liège and Luxembourg. There is no great novelty to note in the situation of the Belgian market; affairs with England become more and more sustained; some great contracts are in course of execution with leading houses, and, on the whole, prices remain very firm, while a good deal of animation prevails at ironworks. On the Bourse of Brussels some lots of rolled iron, No. 1, have changed hands at 71. per ton; delivered at Brussels, No. 2, 71. 12s.; and No. 3, 71. 4s. per ton. Refining pig is in favour at Charleroi at 31. 8s. to 31. 10s. per ton, while casting has made 31. 18s. to 47. per ton, No. 5, according to quality, with a scale of 2s. Girders reflect at Charleroi the rise which has occurred in iron during the last few months. Representatives of several great English houses have visited Charleroi this month.

English and American copper has maintained late rates at Paris, and Chilian is very firm, at 97. per ton for disposable. At Havre, several lots of Chilian have been dealt in for delivery at future rates, at 98.; holders do not appear inclined to cede disposable lots below 97.; the stock at the end of March amounted to 3500 tons. During the month which has just elapsed no change has taken place in United States copper, the stock of which comprised, March 31, about 137 tons; the sale is noted of one lot of 15 tons of Lake Superior, Minnesota, market, at 139. per ton. On the Dutch market the copper of the Society of Commerce has been held at 75. 6s.; one lot of 35 tons of English copper (tough cake) has been held at Rotterdam at 75. 6s. The Hamburg market has remained without change; this price has received of late some supplies of copper from the North. At Berlin, Cologne, and Stettin transactions have been unimportant, and without variations in prices. The market for tin continues without activity; some small lots of Banco have changed hands, at 69 1/4 fls. to 69 fls. at Amsterdam and Rotterdam; and Bilbao has made 69 fls. The Paris market has been quiet, with little business doing; Banco has made 125.; brilliant Detroit, 120., and English, 113. per ton. On the various German markets prices have been almost nominal. The situation of the lead trade is generally good. At Paris rough French has been dealt in at 22. 16s., and Spanish at 23. 4s. per ton. Soft Spanish has been sought after at Havre, at 21. 16s.; at this price some 50 tons, first fusion, have been taken. At Rotterdam, Spanish has been quoted 11 1/2 fls.; Stolberg and Eschweiler, 12 fls.; and German, 11 1/2 fls. At Geneva 800 saumons of Italian and foreign lead have found purchasers at 19. 16s. per ton. The stocks on hand in the Hamburg market have become almost completely exhausted, and soft German is very firmly held. At Berlin the article has been very firm, and in good demand. At Cologne, prices have been firm and without variation. At Stettin there has been a good demand; and on the Brussels bourse German is quoted 20. 16s. per ton; the sale of one lot being also reported at rates which have been kept secret. Rough Silesian zinc maintains its price firmly at Paris, at 23. 8s. per ton (warrants). At Havre zinc has been more freely held of late; several lots of very good marks, brought on the market at 22. 8s. and 23. 4s. per ton for delivery in May, have not found purchasers, and would obtain with difficulty 21. 16s. per ton. At Breslau the demand for zinc has been active, and prices have again risen.

With respect to the construction of lines of railway for the development of colliery workings, we may note the formation of a company for the execution of a line from Lille to the collieries of the Pas-de-Calais. The leading industrials of the department of the Nord form part of the council of administration. The Ciudad-Real and Badajoz Railway Company has received a concession of a line from Belmez to Castillo de Almonacid, intended to accommodate the rich coal of Belmez-Espiel, which can furnish considerable quantities of coal of a quality equal to English combustible. A subvention of 140,000£. is to be accorded by the Government for the line, which will have a length of about 37 1/2 miles. The Ciudad-Real and Badajoz Railway Company will derive very great advantages from the establishment of the line—considerable transports, and combustible at a cheap rate. Foreign with transport and customs expenses, 41. 16s. per ton; but the Belmez Collieries can deliver coal to the line at 10s. or 8s. per ton. It is calculated that, as soon as the basin will be enabled to forward annually more than 200,000 tons to Madrid and Portugal. The Madrid, Saragossa, and Alicante Railway Company consumes annually not less than 60,000 tons, which it has been obliged to obtain hitherto from England, and which it will now seek at Belmez.

Among the dividends recently declared may be noted the following:—Ss. per share as a second dividend for the exercise 1862-3 by the Belgian Central Company for carrying out public works and constructing railway plant; 31. 12s. per share by the Sacré-Madame Colliery Company at Dampremy, Belgium, as the dividend for the exercise 1863; 10s. per share by the United Furnaces, Ironworks, and Collieries Company; 11. 8s. per share by the Fourchambault, Montigny, Torteron, and La Pique Forges and Founds and Community Collieries Company; half payable April 15 and half Oct. 15; 6s. per share by the Loire Mining Company in respect to the second half of 1863; 12s. 6d. per share on account of the dividends of the exercise 1862-3 by the Neapolitan Company for Lighting and Heating by Gas; and 11 per cent. in respect to the exercise 1863 by the Company for the Fabrication of Steel at Döhlen, near Dresden.

The Wreckhills Ironworks, recently offered at public auction by Mr. Thwaites, at Middlesborough, after slight competition, were purchased by Mr. G. Deane, for the sum of 2700£.

## THE MINING JOURNAL.

## Meetings of Mining Companies.

## WHEAL GRYLLS MINING COMPANY.

A general meeting of shareholders was held at the company's offices, Broad-street-buildings, on Tuesday.—Mr. PETER WATSON in the chair.

Mr. DUNSFORD (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed. A statement of accounts for the three months was submitted, from which the following is condensed:—

Labour cost	£2287 9 11
Merchants' bills	653 9 0
Dues	152 1 11
Interest, &c.	21 7 8 = £2114 8 6
Tin sold	£2825 7 5
Sale of arsenic	3 0 0 = 2828 7 5

Leaving debit balance ..... £288 1 1

The assets exceed the liabilities by 3051. 2s. 2d.

The report of the agents was read, as follows:—

*April 9.*—We beg to hand you our report of the present prospects and progress made during the last quarter.—*Fisher's Lode:* The 40 has been driven east 14 fms. 5 ft.; the lode in the present end is 6 in. wide, producing a little tin, but there is another part of the lode further north; we have, therefore, commenced driving in that direction, and expect a short distance will cut the main part of the lode, and judging from the level above we think it will be found of a profitable character, as there is a rich bunch of tin gone down just over this point; the greatest part of this ground will set on tribute so soon as there is a ventilation made. The 30 is driven east 6 fms. 4 ft., and a rise communicated to *Grylls* whim-shaft; this will enable us to set some profitable ground so soon as there is a plat cut at this level. The 30 in the 39 fm. level end east is worth 151. per fm. The 20 has been extended 2 fms. 4 ft. 6 in., and suspended by reason of getting so near the old workings at the pressure shaft, which is now full of water; we expect this water will drain off in the summer, when we shall be enabled to communicate to those workings without any difficulty. The 20 west has been driven 14 fms. 1 ft., and has passed through ground that will work at about 10s. in 11'; the lode in the present end is worth 31. per fm. The 10 is driven west 19 fms., and communicated to Jones's whim-shaft; a certain part of this ground will be taken away at a high distance, but the lode in the end at the present time is poor. Jones's whim-shaft has been sunk 9 fms., and holed to the 10, as named above. The deep adit level is driven west 5 fms., and would be 21. per fm., but was unproductive, when an improvement took place, and the end is now worth 47. per fm.; price for driving 11. per fm. *Kendall's Lode:* The 27 has been driven west 7 fms. 0 ft. 6 in.; the lode for this driving and also in the present end is small, and of no value. The adit level has been cleared and repaired for a long distance, and put in proper working order. At the engine-shaft the old end-fell-off bob is taken out, and the broken parts replaced with new; a set of cells, stays, &c., fixed around the rod, and the pitwork nearly completed to commence working the engine. At surface we have repaired the flues, ovens, and burning-house, and put them in proper order for having tin. The engines have taken out the old nozzles, and put in new ones, and sent the spiles and pillars to boundary to be lengthened; in a few days after we get those materials we shall be in readiness to work the engine. There is also a new horse-whim erected on *Michell's* shaft. From our underground operations we have raised 417 bushels of tinstuff, which realised 511. 7s. 5d., and have in stock on the floors about 1000 bushels more, which we consider is worth 751.—*EDWARD ROGERS, JAMES POPE.*

see no reason why it should not be an advantageously adopted in their case as had already been done in other enterprises.

The SECRETARY said, as far as these properties were concerned, they presented most remarkable facilities for being brought into a consolidated property. He had not the slightest doubt but that the most satisfactory arrangement could be made, and one that would be beneficial to all parties.

A vote of thanks to the Chairman was then passed, which concluded the proceedings.

## GREAT WHEAL GRYLLS MINING COMPANY.

A general meeting of shareholders was held at the offices, Broad-street-buildings, on Tuesday.—Mr. PETER WATSON in the chair.

Mr. DUNSFORD (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed. The accounts showed—

Balance last meeting	£2102 5 0
Tinstuff sold	51 7 5 = £2153 12 5
Mine cost	385 5 7

Leaving credit balance ..... £1769 6 10

The report of the agents was read, as follows:—

*April 9.*—We beg to hand you our report of the prospects and progress made during the last three months.—*Michell's Lode:* The adit level has been driven west 27 fms. 3 ft. 6 in., through a lode for all this distance worth 31. per fathom; the back of which will be taken away on tribute, at about 9s. in 11'; the end at the present time is worth 27 fms. 2 ft. per fathom. *Michell's* shaft is sunk 8 fms., and is down 33 fms. from surface; expect to communicate this shaft to the adit level in a month from this time, which will enable us to set some profitable ground at this part of the mine.—*Stevens's Lode:* The adit level is extended west 5 fms. 4 ft. 6 in.; the lode is 5 ft. wide, worth 51. per fm., and would work at 8s. in 11'; if we had a stamp on the mine. The 27 fm. level from surface is driven 22 fms. 1 ft.; the lode for this drive is worth 21. 10s. per fathom, a certain part of which will be taken away at a profit; the lode in the end is 4 ft. wide, yielding a little tin. At this level east we have driven 3 fms.; the lode has produced a little tin, but not enough to set a value on. The 15 is driven west 6 fms. 1 ft.; the first 5 fms. was unproductive, when an improvement took place, and the end is now worth 47. per fm.; price for driving 11. per fm. *Kendall's Lode:* The 27 has been driven west 7 fms. 0 ft. 6 in.; the lode for this driving and also in the present end is small, and of no value. The adit level has been cleared and repaired for a long distance, and put in proper working order. At the engine-shaft the old end-fell-off bob is taken out, and the broken parts replaced with new; a set of cells, stays, &c., fixed around the rod, and the pitwork nearly completed to commence working the engine. At surface we have repaired the flues, ovens, and burning-house, and put them in proper order for having tin. The engines have taken out the old nozzles, and put in new ones, and sent the spiles and pillars to boundary to be lengthened; in a few days after we get those materials we shall be in readiness to work the engine. There is also a new horse-whim erected on *Michell's* shaft. From

through the report of the proceedings which appears in the *Mining Journal*, the exact position and prospects of their property. (Hear, hear.)

The accounts were then passed and allowed, and the report was ordered to be entered on the minutes.—A vote of thanks to the Chairman terminated the proceedings.

#### GREAT SOUTH CHIVERTON MINING COMPANY.

A meeting of shareholders was held at the London Tavern, on Thursday, at which Mr. W. LELEAN presided.

The notices convening the meeting having been read,

The CHAIRMAN said that the present meeting had been called for the purpose of considering, and if approved of adopting, resolutions for the future government of the company. Before proceeding to move the first resolution he might, perhaps, mention that the company was originally constituted in 25 shares, the holders of which had defrayed the whole of the costs up to March 1; but it was proposed to make a call of sufficient amount to provide for the working costs for some few months, by which time, it was hoped, some important discoveries would be made.

Mr. J. HARRIS enquired if the lease had been properly secured, and if it contained anything but the usual covenants?—The CHAIRMAN said that tack-notes had been signed, and the leases would have to be taken up in six months hence. The lords were the same as those of West Chiverton.—Mr. J. HARRIS wished to know, as all the costs had been paid up to March 1, the total amount of debts contracted since that period?—The CHAIRMAN presumed that the total amount would not exceed 50L.

Mr. E. GOMPERTS said that before he introduced this mine to his friends he had it inspected by two accredited authorities—Capt. H. James and Goldsworthy, and such was the character of their reports that he (Mr. GomPERTS) felt he was fully justified in advising his friends to take an interest in the Great South Chiverton Mine. He knew that no man could speak confidently of the success of any mine, but seeing that this property was situated in the richest lead district in Cornwall, and that it possessed lodes parallel to those which had proved, and were now proving, so continuous in West Chiverton, which was, perhaps, the richest lead mine in operation, he did think the shareholders had secured in Great South Chiverton a property which, to say the least, presented unusually favourable chances of successfully vying with its rich neighbours. All he could say was, that he hoped and believed their most sanguine expectations would be realised.

The following report was then read:

April 14.—Since my last report we have been making further explorations on the backs of the lodes then discovered, costeading the sett in various directions, and bringing up the drain then referred to, the results of which are most satisfactory. The drain is cut for 40 fathoms in length, and is now 12 feet deep; the stratum is a light blue killas, highly congenial for lead, and like the lead-bearing ground of West Chiverton. In two places we have thrown up gossan, which appears to be connected with the backs of lodes, but it is not sufficiently deep to determine. This cutting will, probably, lay open other lodes. We have discovered another east and west lode, 35 fms. north of the one marked furthest north on the plan; its bearing seems just the same as the others; it has a gossan back, but being just discovered we have seen very little of it. We have also discovered elvan, of which we have thrown up large quantities in different places, and there appears to be a large elvan course running through the middle of the sett, which may be regarded as a very important discovery. In opening on the backs of the lodes previously discovered, we find they are strong and regular. The three east and west lodes underlie south; the north and south lode is nearly perpendicular; they contain a great deal of gossan and flockan, occasionally a little mudnile, and look like the backs of large lead-bearing lodes. Some particles of lead and blonde have already been seen in the north and south lode, and spots of lead in the middle lode, which is more than could be expected so near the surface. Looking at the position of this mine, the stratum being so similar to that of West Chiverton, the direction of the east and west lodes being just the same as the rich lodes there, their underlying the same way, their contact with elvans, and intersection by one or more cross lodes, irresistibly lead to the conclusion that it only requires development in order to a good lead mine being opened up.—J. NANCARROW.

The CHAIRMAN, in reply to a question, stated that at present they could not judiciously increase the expenditure of the mine; but if a lode were cut, which might be the case in a few days, the expenditure would necessarily be increased.

It was then resolved that the mine should be divided into 6000 shares, and that for the future working of the mine a call of 10s. per share be made, payable at the company's bankers, a discount of 5 per cent. to be allowed if the same be paid within 30 days.

Mr. GOMPERTS was exceedingly glad to find that the call just made had been so unanimously agreed to, for as they had every reason to hope they were going to have a great mine, the most politic course for them to pursue was to start with capital sufficient to provide the property with machinery, and to carry on operations for months to come.

It was then resolved that the Bank of London should be the bankers of the company. A committee of management was appointed, and Capt. J. Nancarrow was appointed the manager and purser, at a salary of eight guineas per month; and Capt. George was appointed the resident agent. Mr. H. Chapman was appointed secretary. A code of rules and regulations were then read and approved.

A vote of thanks to the Chairman was passed, which terminated the proceedings.

#### SOUTH EUROPE MINING COMPANY.

At the general meeting of shareholders, held at the offices of the company on March 31, the following report was read:—

"During the past year 5000 tons of ore has been raised from the Buitron Mine, and 5000 tons exported to England. The ore has found a ready market, and has proved of the same quality as previously. Strong representations have been made by the local director at the mine in favour of the immediate erection of cementation works, by means of which the less rich ore can be most profitably treated. The plans and estimates for these works were laid before the directors, and a considerably larger expenditure is necessary for its development, and the present resources of the company cannot meet this. Very great reductions can be made in the cost of the ore by increasing the facilities of transit. They estimate a sum of 20,000/- at least will be required to place the mine in a thoroughly paying position, irrespective of the floating capital. The construction of the greater portion of the road from the shipping port to Buitron has been conceded to a company, who are now proceeding with it, but a connecting link of about five miles is still wanting, which must be made by the South Europe Mining Company. The directors sent out in December last a highly experienced mining captain, recommended by Mr. Peterwick, the company's consulting engineer. He describes the resources of the mines as abundant, both in ore for exploration and cementation, that it is an exceedingly valuable and profitable mine, and that more especially when cementation works are carried out. He looks on the mass of ore as practically inexhaustible, and all profitable. The directors consider that all the efforts of the company should be devoted to carrying out the works indicated; and although the importations of ore, in spite of every difficulty, show a profit, they think it would be unwise to declare any payment of the interest at present."

The report having been unanimously approved and adopted, the usual routine resolutions were passed. Some conversation took place upon the state and prospects of the mine, and the meeting separated.

#### TRUTH'S ECHOES, OR SAYINGS AND DOINGS IN MINING.

The Mining Share Market has been active throughout the week, and a large amount of business appears to have been transacted. The fluctuations which have taken place have not been so wide as frequently occur, shares generally maintaining fair market quotations. The usual fortnightly settlement took place on Thursday, and considering the heaviness of the account and the tightness of the financial market, it passed off satisfactorily.

WHEAL SETONS have been freely dealt in at advanced prices.—WEST TRESCROFTS have been freely dealt in at advanced prices.—NANGILLES have gradually improved, and in better demand.—CLIFFORDS have receded, and more freely offered.—EAST BASSETS, after an active enquiry, are more freely offered at lower prices.—WHEAL BULLERS have receded, and are rather heavy.—EAST CAIN BHEAS have been down at lower rates.—SOUTH TOLGUS, STRAY PARK, and TINCROFT are each offered at loss.—WHEAL GHENVILLE have shared very largely in the transactions of the week, and advanced considerably; although some slight fluctuations have taken place, they left off firm.—EAST GREENVILLE shares are now standing at such a price that they can scarcely fail to give a large profit on a purchase at present prices.

CHIVERTON DISTRICT.—Being in this district a few days ago, I took the opportunity of visiting one or two of the mines in the neighbourhood. The first, of course, was WEST CHIVERTON, where I found the floors full of lead, and from the reports of the miners, and persons in the neighbourhood, I learnt it was looking better than ever, and bids fair to equal, if not surpass, the famous old East Wheal Rose Mine. I next went to NORTH CHIVERTON (worked last as Wheal Anna), and was at once struck with the similarity of appearance of the burrows, and of the stuff coming up from underground. I found kindly looking piles of lead and jack on the floors, and a pure busy at work making them marketable. The proprietors seem determined to give this property a thorough trial; the engine-house, for a splendid new 60-inch engine, being nearly completed, and from the very favourable appearance which the mine now presents, there is little doubt that shortly after the engine goes to work the hopes entertained by the proprietors will be realised. The mine is under the management of an experienced and successful lead miner, and everything being done well.—*Newton, April 13.*

CAPE CORNWALL.—Operations have been commenced with vigour on this first-rate property. The erection of an engine-house, carpenters' and smiths' shops, boiler, and account-house will be proceeded with at once, and no time lost to work the mine. A deputation of the directors have been staying at St. Just, who have appointed Capt. Ralph Goldsworthy as the agent, and given all the necessary instructions to carry on the works without delay. The utmost confidence is felt in the neighbourhood that the determination of the directors to work this property vigorously will be crowned with success. The lodes from the St. Just United Mines are going right away into the Cape property, and are richer as they near the boundary, and there is a strong probability that when they are intersected by the cross-cut from the engine-shaft they will turn out very productive. In the course of a few months the shareholders will, doubtless, be rewarded by good news from Cape Cornwall.

WHEAL ESTHER.—I was surprised to see the progress made at this mine during the last few weeks, and it is gratifying to know there are so many large lodes laid open and every one yet discovered containing a quantity of tin, of good quality. The stamps are in full operation, and great progress is being made in the construction of the dressing-floors. This will be completed in about a fortnight, and I should certainly calculate in two months from this date that a first-rate parcel of tin will be ready for market. I was glad to see such a large pile already passed through the stamps, and ready for the floors.

EAST DEVON CONSOLS.—Though the Devon Consols lode has not yet been reached, the spirit of the adventurers is by no means daunted, inasmuch as the lode is known to exist, having been seen close up to the cross-course. A slight change in the underlie would account for the delay. Nothing can look more encouraging; the fine white killas continues, with occasional branches, highly mineralised, and carrying fine stones of ore, underlying towards the lode. The water has rather increased.

WHEAL CARADON.—Last week's Journal gave a very lucid and interesting report from the agents of this mine. Among other matters, mention was made that they had commenced with spirit to cross-cut the 60 under adit, from Cruttwell's engine-shaft, to intersect the south lode, of which there are several unseen. It is pleasant to know that since they have cut through the elvan on their progress everything indicates a speedy improvement in the mine.

NANGILLES.—The engine-shaft since Thursday last has very much improved: it is now worth 40/- per fathom.

EAST BOTALLACK.—The operations at this mine are progressing exceedingly well. The engine-house will be completed this week, and no time will be lost in getting the engine to work. The shaft is being sunk with all dispatch, and the lode improves every foot we sink. The ground is easy, and very congenial.

NORTH WHEAL CROFTY.—It must be highly satisfactory to the old adventurers, after the large amount of perseverance shown and money expended, to find their property getting into a profitable state of working, and the prospects so much improving. Should the recent discovery of copper, which is a very important ore, in the bottom of the 43, west of Peterwick's, hold good, and the lode in the 60 prove as profitable in development as is anticipated, dividends will soon be declared, as previous to this discovery the mine was all but working at a profit.

THE MORRIS SILVER-LEAD MINE, for the last 18 months, has been worked on the Cost-book System, but at the next quarterly meeting it will be for the shareholders to determine whether it shall continue to be so conducted, or placed under the Limited Liability Act. Fine specimens of the lead ore, barytes, blonde, &c., from the mine, can be seen at the company's office. Abridged prospectus in another column.

ST. JUST CONSOLS.—The shareholders in this property will be pleased to hear that the operations which are being carried on present most pleasing prospects of success. Two of the directors and the secretary, Mr. Carthew, were at the mine on Wednesday, and spent very considerable time in going over the works, and minutely examined into the details connected with both surface and underground operations. The Guide lode, which is producing a quantity of tin, and has much attracted the attention of the mining authorities of this district, is improving in depth, and the tinstaff now raising shows a richer produce. The various lodes in the sett are intersected by this deposit, and there can be little doubt it will exercise a highly beneficial effect upon them. After carefully going over the sett, accompanied by Capt. Carthew, Capt. Williams (the agent), and Capt. Ralph Goldsworthy, of the Cape Cornwall Mine, the party adjourned to the court-house to dinner, where the directors took the opportunity of expressing their approval of all that had been done for the best interests of the adventurers, and complimented the executive on the admirable manner in which the surface operations had been laid out, and more particularly the dressing-floors, which are most complete. The water-wheels, erected by Holman and Sons, of St. Just Foundry, are perfect, and are

80 east is valued at 15/- per fathom; the rise above the 80 west is worth 20/- per fathom; the other productive places maintain their value and appearances.—WHEAL MARGERY is represented to have improved; the lode in America shaft is now worth 16/- per fathom, and the deeper levels are opening out far better than was anticipated. The 122 east is worth 9/- per fathom, and presents prospects of the most encouraging character.

EAST LOVELL.—An important improvement is reported to have taken place during the week in two or three places; the lode in the shaft, sinking below the 26, is stated to be worth 120/- The lode in the 20, referred to last week as having improved, is now worth 150/- per fathom, arising from a junction with a north lode; and the stope in the back are worth 100/- per fathom. The winze sinking below the 20, west of Peter's, is worth 80/- per fathom. They sold last week 9 tons 16 cwt, 12 lbs. of tin, realising 629/-.

SITNEY AND CARMARTHEN.—At the 95 west the lode continues to look remarkably well, and also the winze in the bottom of the 85, at which two points further improvements are anticipated, from the general appearance of the respective places.—GREAT WHEAL FORTUNE: The lode in the 95, east of Hosking's shaft, and the winze sinking under the 90, east of Painter's, continues to look well, and has improved during the past week; and the 102 east is looking better.

JAMES LANE.

driving 16 heads of stamps; indeed, these, together with the dressing apparatus, which includes a first-rate biddle and other machinery, enables the ore to be returned on a much cheaper scale than any other mine in the county. The situation of the property is most favourable for a good mine, and, if present prospects continue, the shareholders will soon see their capital returned in the shape of dividends.

DEVON COPPER MINE.—The interesting ceremony of starting a fine water-wheel, &c., took place last week, and the whole went off in a most satisfactory style. The ready command of a water-power equal to every necessity is of great value to the mine, avoiding the usual costly erection and maintenance of steam-power, and enabling the adventurers to develop at a trifling cost what is by some pronounced the finest looking lode ever seen in the county. The railway in course of construction will pass near the seat, and will obviously greatly enhance its value. All is going on very quietly, but surely, and steadily. A large number of the shareholders are persons of great mining experience, who know pretty well what they are about, and the mine will probably make little noise in the world until some day it becomes suddenly known that discoveries equal to any ever yet seen in British mining have been made. It seems to be the opinion of all who have seen this fine lode that deposits of ore cannot be great depth from the present workings.

GUNNIS LAKE (CLITTERS).—The announcement in last week's Journal that there were 30 tons of copper ore for sale from this mine on Feb. 21 should be 100 tons.

LLANFAIR GREEN SLATE QUARRY.—A correspondent writes that this quarry is progressing rapidly, and that there is every prospect of its proving one of the most lucrative speculations hitherto entered into in this locality. Already extensive openings have been effected, and tunnels of great length have been driven. The quality and colour of the slates are highly satisfactory, and appreciated. Mr. Harvey, the manager of this quarry, is entitled to much praise for the able and scientific manner in which he conducts the operations. The situation of the quarry is most eligible, and within a comparatively short distance of Pemban quarry, to where the slates can be conveyed at a very trifling expense, and shipped to any part of the world.

#### PORT AUGUSTA AND NORTHERN RAILWAY COMPANY OF SOUTH AUSTRALIA (LIMITED).

This Australian enterprise is founded upon a right principle, and may be accepted as an acknowledgment on the part of the colonial authorities that the plan by which the capital for the Victorian and other lines has been furnished is not the most suitable to a young and comparatively unpopulous settlement. There are natural riches in abundance, but it is ascertained that a railway, even from promising mines to an excellent harbour, especially when extending to nearly 100 miles, is not likely to be established except either upon a principle of guarantee, which could scarcely be furnished in this instance, or on that of a large and valuable subvention in the shape of grants of land. The Local Legislature has accordingly conceded to the company the whole of the land occupied by the railway for a breadth of two chains; and also blocks of land equal to two square miles for every mile in length traversed by the railway, selected on either side, such blocks not to exceed twenty square miles in area. This grant is equivalent to 128,000 acres for a length of 100 miles, irrespective of the land required for the line itself. To provide payment of interest during construction the company will dispose of a portion of the 128,000 acres, and as the mineral district commences at a point about forty miles beyond Port Augusta, and thence extends for about 160 miles, the minerals must themselves produce a considerable profit. The Government engineer is of opinion that the line or tramway may be constructed for 200/- per mile, and hence the capital is fixed at 300,000/-, in shares of 5/- each, but only half of the number is to be issued at present.

It should not be overlooked by intending investors that there is an enterprising and prosperous mining company in the immediate neighbourhood, and that it is this commercial body which is actively moving in the matter. The colony is, of course, desirous to encourage labour, and to provide for settlement; but the Yudanamutana Copper Mining establishment has closer, if not higher, purposes than the mere progress of South Australia. It has an enormous produce to export, and is prepared to provide a vast and regular traffic from its own resources. In addition to these productions, it appears that there are already more than 200 applications for mineral leases, for an extent of country five times the area of Cornwall, all of which is represented as being rich in mineral wealth. The working of some mines recently opened corroborates this impression, and from one alone—the Blinman—belonging to the Yudanamutana Mining Company, about 5000 tons of copper ore have been produced within eighteen months from the commencement of operations.

The conveyance of produce from the immense pastoral districts which surround this territory is calculated of itself to provide 15,000/- per annum, and the minerals may as surely be calculated as equal to a like amount. Then we are led to a further conclusion, namely:—That the line will be used more or less by the northern settlers, occupying an area of not less than 10,000 square miles, for the carriage of stores, wool, and other produce; also for the passage to and fro of the migratory labouring population (a tolerably numerous class now); and it would likewise be available for, and hauled by a great boat by, the settlers in the new country, far north and north-east, or west, which has recently been discovered, and is now in course of being stocked."

The geographical position of Port Augusta, which ought to be looked at on the map, is of paramount importance in a consideration of these matters, the more especially as it must eventually become the entrepot of the commerce of this portion of the colony, and which embraces most extensive pastoral and mineral districts. Again:—Hills, abounding in minerals, called Flinder's Range, commence on the eastern side of Spencer's Gulf, and extend 200 miles to the north of Port Augusta. Many valuable copper mines have been discovered, and some of them are now being worked; but the development both of the pastoral and mineral resources of this part of the colony is greatly retarded by the want of easy communication with the port of shipment. Flinder's Range is bounded to the westward by a perfectly level country, which presents no impediment whatever to the formation of railways."

The cost of a single line, adapted for either horse or steam-power, has been estimated at 2000/- per mile, and it is even probable that it might be constructed within this estimate, seeing that there are no earthworks of any account nor expensive bridges to be provided, and so we conclude that, with a moderate exercise of faith and patience by the investor, and a becoming energy on the part of the respectable and practically intelligent board which ushers the project into notice, this Port Augusta may well become one of the best paying properties in Australasia.—*Railway Times*, April 9.

COAL IN BRAZIL.—Under date Rio de Janeiro Feb. 10, Dr. Reginaldo Moniz Freire writes that the coal mine of Iaguarao, between the Rivers Canario and Iaguarao Chico, in the province of Rio Grande do Sul, was not discovered, as is stated, by Mr. Nathaniel Plant, the English engineer, who has only recently examined and recognised its great richness, and sent reports and samples of his explorations to London and Manchester. The discovery of this mine was due to the late Guilherme Boulech, and the Imperial Government by the decrees of Feb. 6 and Oct. 9, 1863, conceded to Senhor Louis Boulech the privilege of working these mines for 90 years, himself or by means of a company, for the organisation of which he is in treaty, and it is hoped that within a short time everything will be concluded for the commencement of regular mining operations. It is not certain either that the coal already extracted from the mine, and which figured in our national exhibition, in the Universal Exhibition of London in 1862, was not of superior quality to any other taken from the English mines, inasmuch as it has been so considered, from analyses made both here and in England by competent authorities. But as the mining works up to the present have been quite superficial, it is possible Dr. Percy and Mr. Hunt, in making their examination, may have fallen upon some of the worst samples sent over to London. Mr. Smith, an English engineer of great reputation, who is at the present moment on the mine at Iaguarao making the necessary surveys, with a view to fixing the locality for the construction of a railway to convey the produce of the mine to the port of embarkation, and from whom we hope to receive in a little time the plans of this line, together with information of a most detailed character, has found the mine not only to be of prodigious richness, but that the mineral is also of superior quality, and would continue to improve in proportion as the workings were carried to greater depth. It appears from other advices that the nearest point to which the laguna coal approaches the port of embarkation is about 20 miles above the mouth of the laguna, and that the railway carriage will be under 30 miles. The coal in the laguna district is of great depth and much can be brought by open quarrying. Another coal field exists near Porto Alegre, and a third, 50 square miles in extent, in the province of San Catarina. Much interest is attached to the discoveries by the Brazilians, who now import about 250,000 tons per annum, at nearly thrice the price they would have to pay for Brazilian coal. The coal is declared to be bituminous, and well adapted for steam and smelting purposes; and since it is certain that the coal exist in the abundance stated a royalty of 6d. per ton would give enormous returns to the owners of the concessions, it is thought that an offer upon those terms may be made to English capitalists. The necessary funds for energetically working the deposits may thus be obtained, whilst the "bird in the hand is worth two in the bush" principle of attempting to sell the property altogether to the English would not be likely to succeed, as this would be, at least, *prima facie* evidence of want of confidence on the part of the vendor. The proposition to forego all purchase money, and rely upon royalty, shows such thorough honesty of purpose that it is sure to be regarded with favour in England.

## Mining Correspondence.

## BRITISH MINES.

**ARUNDELL TINWORKS** (Lanivet).—C. Pengelly, April 13: Since my last report it has been found necessary to change the name of this property to that of the Reperry Tinworks, and this has been done accordingly. I have much pleasure in stating that the preliminary arrangements have been carried out, and that, with the exception of the dressing-floor, not yet completed, the works, roads, and machinery are in perfect order. The engine and stamps have been at work for about three weeks, and all is going well. As regards the mine, I can say confidently that it presents unusual prospects. Two lodes of great value have recently been discovered and laid open, and there is enough tinstuff to stamp for years to come. I have had samples analysed by Mr. F. Penberthy, of the Woolley-lane Tinworks, with the following results:—No. 1, 5 cwt., 2 qrs. 2 lbs.; No. 2, 3 cwt., 6 gr. 10 lbs.; No. 3, 5 cwt., 0 gr. 10 lbs.; No. 4, 10 lbs.; No. 5, 1 gr. 12 lbs., of black tin per ton of stuff. We are now engaged stamping the stuff mentioned above as No. 5, reserving that from which samples Nos. 1, 2, and 3 were taken for separate treatment. No. 4 specimen is the worst I could find. These results speak for themselves. By the second week in May I hope to have a good parcel of tin for market, and I have no doubt that in a few months we shall pay good dividends.

**AGTACT.—W. Hosking**, April 14: The points of operation at this mine are assuming much more favourable and valuable appearances than for some time past, and such as lead us to expect permanent and valuable courses of tin at deeper levels, to reach which our shaftmen have nearly completed cutting out for pit, cistern, &c., at the 16 ft. preparatory to sinking Prosper engine-shaft. The 16 end, driving west of this shaft, contains a lode 2 ft. wide, 9 in. of which is very excellent work for tin, worth 107 per fm. We have set a stop in the back of this level, where the lode is 1 ft. wide, producing work for tin, worth quite 77 per fm.

**BEDFORD CONSOLS**.—Capt. Mitchell, April 14: In the middle adit east the north lode is about 2 ft. wide, composed of spar, mundic, prian, flookan, white iron, a little tin, and spots of copper ore, and looks promising for an improvement.

**BOSCAWEN**.—J. Edwards, R. Giles, April 9: The lode in the 80, driving west of Hunter's shaft, is small and poor. The lode in the 70, west of said shaft, is 18 in. wide, worth 162 per fathom for copper ore. The lode in the stopes in the back of this level is worth 162 per fm. We are driving a cross-cut south at the 70, from Hunter's shaft, to intersect the south lode, ground favourable; we hope to meet with the lode in 2 or 3 fms. more driving. The lode in the 60, west of said shaft, is 18 in. wide, worth 172 per fathom for copper ore. The lode in the stopes in the back of this level, east of No. 3 winze, is worth 122 per fm. The 50 end is suspended, being near the boundary. The men are engaged clearing the 30 at the caulkershaft. We are driving a cross-cut south at the 14 from Kitteh's shaft to intersect the tin lode, and hope to meet with the lode 14 driving about 5 fms. more.

**BOTTLE HILL**.—J. Eddy, April 13: The lode in the stopes west of Williams's shaft, in back of the 12, has increased in size, now about 7 ft. wide, and the tinstuff raising is of a better quality. The lode in the stopes east of shaft, in back of the 24, is without alteration. The lode east of Williams's shaft, east of slide, in the 24, has become more selected; the lode is larger, and producing better work for tin than when reported on last week. The lode in the stopes in the back of this level is turning out moderate lodes work. I intend to send away samples on Friday next, and shall have about the quantity of tin promised.

**BRONFLOYD**.—Jas. Lester, April 13: The lode sinking through by the winze from the 40 to meet the 52 when up is now down 8 fms. 3 ft.; it is composed of a strong mixture of quartz, with small strings of lead ore intersecting. The lode in the 52, west of engine-shaft, is easier for progress, and contains a slight mixture of lead, but not sufficient to put a value on; this level is now in about 51 fms. from shaft. The stopes above the 40 will yield on an average about 15 cwt. of lead ore per fathom. Dressing, &c., as usual. The 50 tons sold on the 31st ult. will be shipped in a day or two.

**BRYN GWIG**.—F. Evans, April 14: The lode in the engine-shaft, sinking below the 90, is 1 ft. wide, composed principally of blende, with good stones of lead occasionally; we do not know how soon we may meet with a change for the better there, as we are convinced the runs from the old mine still remain to be explored. In the 90 the west the lode is 1 ft. wide, worth 1/2 ton of lead ore per fathom. In the 90 east the lode is 2 ft. wide, worth 1 ton per fathom for lead; this lode is made up of spar, blende, and lead, but ground rather hard for driving. There are five pitches in the roof of this, and the same level west is producing 1 1/4 ton per fathom. A pitch in the bottom of the 75 east is worth 1 1/4 ton per fathom. Another 20 fms. further east will produce 2 tons per fathom. A pitch in the back of the same level is worth 15 cwt. per fathom. We are still clearing the 75 west, which is full of shale. Two pitches in the roof of the 66 will produce 15 cwt. to 1 ton per fathom, but the ground is hard for opening. We are pressing on everything connected with the mine as fast as possible, and we expect the whim-engine to work next week. The 40 tons of lead ore sold to-day brought 157 4s. per ton. Tenders for the 20 tons of blende have not yet been received.

**BRYNTAIL**.—J. Roach, April 14: In a few days we shall complete the dividing and casing of the engine-shaft to the 20, and put in penthouse, &c.; we will then commence sinking for a 30 fm. level with all speed. There is no alteration in the 20 east, on the north part of the lode, since last reported. The cross-cut north on the lode, west of shaft, is driven 8 ft.; stones and strings of lead ore are met with. There is no appearance of the north wall yet. The rise opposite the engine-shaft is 4 fms. 4 ft. high. We hope to effect a communication with the 10 this month. The lode in the winze sinking under the 20, west of shaft, is without change since last described, worth 207 per fm. for lead ore; ground has been cut, water taken up, and tackle fixed, therefore I expect to make good progress in sinking in future. All other work in the mine, including dressing, is going on as fast as possible.

**CAPE CORNWALL ST. JUST CONSOLIDATED** (Tin and Copper).—R. P. Goldsworthy, April 14: We are now preparing the old smith's shop for fixing a bellows and anvil, and shall commence taking out the foundation for the engine and boiler-houses and other necessary work to-morrow. We hope to get up the engine-house, put in the engine, and begin to fork the mine in about three months. We shall fork and clear the mine with all possible dispatch, as from reliable information when the mine is in fork we shall be at once to return tin from the lodes in the eastern levels, and push on the western end on the course of the lodes, which are of a highly promising character for the production of copper ore.

**CARADON CONSOLS**.—Wm. Rich, April 12: The north lode, in the 80 west, has a very promising appearance; it carries stones of ore, with plenty of mundic and kindly fluor-spar. The ground in the cross-cut south is rather harder than it has been, but I think it will soon ease again. There is nothing new to notice in the ends going east and west on the engine lode.

**CHARLOTTE UNITED**.—F. Floyd, R. Johns, April 14: The engine-shaft is sunk 8 ft. below 90; the lode is 2 ft. wide, producing some good stones of ore, and at present the lode is looking far more promising than it has for some time; it is composed of carbonate of iron, peach, mundic, and rich copper ore; there is little or no spar in the lode, but it is our opinion that as the shaft goes down we shall find the lode to improve in size and value. We have set to the shaftmen to sink 3 fms., fix a 10-fm. drawing-lift, cut cistern-plat, put in bores and cistern, for the sum of £64. The 90, west of engine-shaft, is driven 12 fms.; the lode in this drivage has been unproductive, but at present the lode is larger, about 18 in. wide, producing good stones of ore. In the eastern end, in the same level, the lode is 1 ft. wide, producing a little ore, but not to value. In the 80 west the lode is 18 in. wide, worth 47 per fm.; we hope in driving about 3 fms. more that we shall get through the hard greenstone we have at present in this end, when this hard bar of ground, when we hope the lode will resume its former features. We have suspended the 60 east for want of air, and have put the men to open east and west on the south lode at this level, which is seen in the 60 cross-cut, south of Dobb's shaft. Behind the 60 east we have set a pitch to two men, at 12s. in 17. In the 50 west the lode is 2 ft. wide, composed of spar, carbonate of iron, mundic, and copper ore; by extending this end about 12 fms. more we shall intersect the cross-course, where we anticipate finding rich deposits of ore, as was found to the north and south on the same. In the 80 cross-cut north we have cut the north lode; it is 18 in. wide, and is yet in a disordered state, being near the slide lode, driven east 5 ft. and west 4 ft. Our tribute department is much the same as usual.

**CLARA UNITED**.—J. Lester, April 13: Llywernog: The lode in the 40, east of engine-shaft, is without alteration; the lode in the same level west is of a very promising character, being a mixture of lead and blende for the width of the level.—Dolwen: This level is now extended north 18 fms. 3 ft.; the ground is very hard for driving, and is not being done by hand labour.

**CLEARE'S HILL**.—S. Cocks, April 14: The men that were put to work to open on the north lode cut it 3 ft. wide, worth 1 1/2 cwt. of tin to the 100 sacks of tinstuff. I have also put them to costean on the middle lode about 150 fms. further west than where we have been working, and have set the lode with splendid work for tin.

**COED MAWR POOL**.—M. Wasley, April 13: It has totally surprised us to keep the 28 drained for any length of time during the past month. The crank pin breakage caused part of the delay. We forked to the bottom on last Sunday night. The weather is, however, so excessively dry that we cannot calculate on working above a day or two longer without rain. I very much fear this spring will prove too dry for us to make any effectual trial in the 28, or to intersect the junction of Ffridd and Chandler's lodes. The winzes in the bottom of the 20 are still producing a fair quantity of ore. What has been sold for several months has been chiefly raised from these points, which proves the lodes to be productive in depth. The ore is also rather cleaner and in quality than what has been raised in the upper ground. The water being in the bottom of the B shaft I placed two men to drive a cross-cut north-east of No. 1 shaft, in shallow ground, which has in 3 fms. driving level, east and west of Field's shaft; it looks very kindly, producing fine stones of ore. We have a considerable length of lodes discovered in shallow ground, and the necessary work to effect the drainage to prove them in depth. The generality of the ground is cheap, and easily worked, and a moderate quantity of ore would pay, provided the drainage could be effected. The quantity of ore in stores and on the mine in course of dressing is about 5 tons.

**CONNORREY**.—Captain Bishop, April 9: Deep Adit: There is more water coming from the end, which makes our progress slow; no change in the stratum. The 54, west of Engine-shaft: This very important part of the mine is looking very promising indeed, and is yielding rich purple and yellow copper ore. The 45, west of engine-shaft, has a little improved for copper, and is yielding good black and yellow ore. An improvement for copper ore has occurred in the 20, west of new shaft, within the last day or two, and the lode is still looking well, yielding better ore and less sulphur than heretofore. The 18 fm. level ends, east and west of Field's shaft, are much the same as for some time past, yielding good sulphur and copper ore. At the 10, west of old cross-cut, there is no change for the week. I cannot say the 10, south of Tracey's shaft, is looking so favourable for ore, but it may shortly change for the better. Nothing of commercial value has been intersected at the 10 cross-cut, south of Tracey's shaft, during the week. The stopes on great sulphur has been cut in the 20 fathom level cross-cut, south of new shaft, this week. The stopes on great copper and other lodes are much the same as last.

**CRENNER AND WHEAL ABRAHAM**.—J. Vivian, April 14: We are now ready for the masons to commence building the engine-house at Vivian's shaft, and are only waiting for the large stone to be brought from the Great Alfred engine-house, which will be done immediately. We shall commence building one of the steam-whim and capstan engine-houses on Monday next. The walls of the account-house are being rapidly built by a strong staff of masons. The boiler builder with his staff has also commenced operations. We have two of the large boilers on the mine, and a long tube or reservoir for heating the water before it passes into the boilers. Two more boilers will also be brought on the mines to-morrow. The 90-in. cylinder engine is being delivered as fast as possible. The clearing of the adit, opening whim and footway-shafts is being pushed on, and the necessary water-courses, &c., and the sinking of the water-wheel pit for the saw-mill, smithy, &c., is also progressing. The whole of our works are progressing most satisfactorily.

**CROWAN CONSOLS**.—J. Seymour, April 13: The men have just cut into the lode at the 30. I have no time to report on it yet, and am too unwell to go underground.

**CUDDRA**.—F. Puckey, E. Dunstan, April 14: In the 105, east of Walker's shaft, we are still driving in the killas under the lode, which is favourable for progress. In the same level, west of the shaft, we are driving through a disordered piece of ground, mixed up with spar, killas, and capel, and at this present time is spare for driving. The lode in the winze sinking below the 90 is 5 feet wide, composed of quartz, peach, capel, and gossan, and at present unproductive for tin. In the 90 west no lode has been taken down during the past week. In the 75 west we are also driving in the killas under the lode. In the slopes behind this end, and likewise the slopes in bottom of this level, west of the winze, no lode has been taken down for the month; in the slopes in back of this level, west of the winze, the lode is still looking very well, which is 7 ft. wide, and for about 2 fms. in length is worth 50/- per fm.; this run of tin-ground appears to be making up before the 60 end, and which is in whole ground from that level to the surface. The slopes in back of the 60 are without alteration, still worth 10/- per fm.

**CWM ERPIN**.—April 12: The lode in the 20, going east of the boundary, is small and unproductive. The lode in the rise over the back of this level, 20 fms. behind the present end, is 5 ft. wide, and worth 15 cwt. of lead ore per fm. We have about 2 fms. more to rise here to be at the required height for the 10 fm. level. We have three stopes in course of working over the back of the 20; the lode varies from 3 to 6 feet wide, and will turn out on an average 12 cwt. of lead ore per fm. The lode in the 10, going east of the boundary, is 1 yard wide, composed of clay-slate, copper, quartz, and lead ore, worth 1 1/2 ton of the latter per fm., and shows symptoms to further improve. The rise in back of the 10 has slightly improved; the lode is 18 in. wide, and worth 15 cwt. of lead ore per fm. There are 22 men employed in the different stopes over the back of the 10; the lode varies from 3 to 6 feet wide, and will turn out, on an average, 1 ton of lead ore per fm. The adit level, going east of the boundary, has continued to look very well since the last report; the lode in the present end is 3 ft. wide, carrying two well-defined walls, and worth full 3 tons of lead ore per fm. The lode in the pitch in bottom of the 10 fm. level, 40 fms. east of the cross-cut, is 1 yard wide, and worth from 3/4 ton to 1 ton of lead ore per fm. Good progress has been made in the new cross-cut going north from the side of the hill; the stratum in which this level is now going through shows every indication of our meeting with something good. I should remark that we have laid down a good railroad into the present end, and everything is being done to facilitate the progress of the same.—Tribute: The lode in the pitch in bottom of the 32 fm. level, 45 fms. east of the boundary, is 2 ft. wide, and worth 1/2 ton of lead ore per fm. The lode in the pitch over the back of the 32 fm. level, 90 fms. east of the cross-cut, is 2 1/2 ft. wide, and worth 8 cwt. of lead ore per fm. The lode in the pitch in back of the 10 fm. level, 40 fms. east of the cross-cut, is 4 feet wide, and worth 18 cwt. of lead ore per fm. The lode in the pitch in bottom of the 32 fm. level, 45 fms. east of the boundary, is 2 ft. wide, and worth 1/2 ton of lead ore per fm. The lode in the pitch over the back of the 32 fm. level, 90 fms. east of the cross-cut, is 2 1/2 ft. wide, and worth 8 cwt. of lead ore per fm. The lode in the pitch in back of the 10 fm. level, 40 fms. east of the cross-cut, is 4 feet wide, and worth 18 cwt. of lead ore per fm. The lode in the pitch in bottom of the 32 fm. level, 45 fms. east of the boundary, is 2 ft. wide, and worth 1/2 ton of lead ore per fm. The lode in the pitch over the back of the 32 fm. level, 90 fms. east of the cross-cut, is 2 1/2 ft. wide, and worth 8 cwt. of lead ore per fm. 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of mudi and peach. In the 120 east, on the north branch, the branch or lode is 10 in. wide, producing good stones of ore, and has a promising appearance. We have been obliged to suspend the winze in the bottom of the 120 west, in consequence of an increase of water. The lode in the 110 west is 2 $\frac{1}{2}$  ft. wide, producing 1 ton of ore per fm. The lode in the rise over the back of the 100 west is 1 ft. wide, producing good stones of ore. In the winze sinking below the 90 the lode is 1 ft. wide—unproductive. The ground in the 78 cross-cut south is a little easier.—South Lode: In the 140 east we have put the men to drive south. We have a quantity of water issuing from the south side of the level, and we think we have a part of the lode standing to the south. In the 130 east the lode is 20 in. wide, consisting of peach and spar. We have put a part of men to sink in the bottom of the 130 east, on the south part of the lode, which will produce 3 tons of ore per fm. The lode in the 120 east is 20 in. wide, consisting of peach, spar, and stones of ore. In the 110 east the lode is 15 in. wide, chiefly consisting of flock. The lode in the 100 fathom level east is over 3 feet wide, composed of peach, spar, and spots of ore—a strong, kindly lode.

ST. DAY UNITED.—E. Ralph, J. Cook, J. Gilbert, April 9: We beg to hand you the following as our report of the tutwork operations:—The 154 end, east of Opie's shaft, is worth 50 $\frac{1}{2}$  per fm. The lode in Opie's shaft is worth 50 $\frac{1}{2}$  per fm. In the 154 end, west of Billing's, the lode is 3 ft. wide, worth 12 $\frac{1}{2}$  per fm. In the 174 end, west of Billing's, the lode is producing tin and copper, worth about 8 $\frac{1}{2}$  per fm.; there is a part of the lode standing north, and we expect to have a short cross-cut to intersect it. In the 161 end, west of Billing's, the lode is large and more kindly, worth 10 $\frac{1}{2}$  per fathom. At Richard's shaft, sinking below the 130, the lode is large, worth 15 $\frac{1}{2}$  per fm. The 140 end is suspended for the present, and the men are engaged rising against Richard's shaft in order to ventilate this end as soon as possible. The 97, east of cross-cut, on Garby's lode, is producing 4 tons of ore per fm.—East Wheel Mill: The 20 end, west of Williams's shaft, is worth 8 $\frac{1}{2}$  per fm. The carbona at Charles Frederic's is worth 4 $\frac{1}{2}$  per fm. The 20 end east is not looking quite so well, producing good stones of ore. The lode in the 110 east is 15 in. wide, chiefly consisting of flock. The lode in the 100 fathom level east is over 3 feet wide, composed of peach, spar, and spots of ore—a strong, kindly lode.

WEST GREAT WORK.—S. J. Reed, April 13: There is no change to report either in the cross-cut south from the new shaft, or on the No. 4 lode west. The rise on the No. 4 lode, west from the great cross-course, is worth 6 $\frac{1}{2}$  per fm. The new, or No. 3 lode, west from Pauli's engine-shaft, is about 1 foot wide, producing tin-stuff of low quality; the indications, however, are favourable, and I think we shall soon have an improvement; this lode, east from said shaft, is producing stones of tin; and the rise in the back is worth 5 $\frac{1}{2}$  per fm. We have resumed driving on Gregory's, or No. 2 lode, west from Pauli's engine-shaft, and I am glad to say an improvement has taken place; the lode is 15 in. wide, worth 4 $\frac{1}{2}$  per fm.; driving at 50s. per fm. The engine-shaft is down to the deep adit level, and yesterday communicated therewith. We shall now cut plat, and prepare to sink below as far as the water will allow, until the engine goes to work. The walls of the engine-shaft will be up-to-morrow, and the stack completed by the end of the week. The other works are progressing satisfactorily.

WEST GREAT WORK (Special Report).—April 5: The engine-shaft has been sunk 18 fms. below the surface, and it is expected a communication will be effected with the adit in a fortnight from this time.—Gregory's Lode: This level is driven west of cross-cut 8 fms.; the lode for this distance has produced tin, but is not of any commercial value; an improvement has, however, taken place, and the lode in the present end is worth 8 $\frac{1}{2}$  per fm.—No. 3 Lode: This level is also driven west of cross-cut 35 fms.; the lode is 18 in. wide, and worth for tin 32 $\frac{1}{2}$  per fm.; the back is being stopped at 17. 15s. per fm., and worth for tin 6 $\frac{1}{2}$  per fm. Had their been a stamp on the mine a considerable portion of this ground could be worked at a profit. They have driven 35 fms. east on said lode, the first 25 fms. through a rich course of tin, but the lode in the last 10 fms. has considerably diminished in size, and in a like manner failed in returns.—No. 4 Lode: This level is driving west by two men, at 37. 5s. per fm.; the lode is small and poor. In the end, driving east, the lode is also unproductive, but the backs can be worked at a profit. On No. 5 and 7 lodes nothing doing. On No. 6 lode they have driven west 9 fms. through a rich bunch of tin. This you will please observe is characteristic of the locality. I could enumerate several mines where rich deposits of tin have been found at a shallow depth, and particularly in disintegrated granite: hence the eclipse, which for so many years hung over the mining district of Marazion—old men distilling into the minds of young men that disastrous and pernicious doctrine, which they themselves believed, that lodes making rich backs would not hold down to a great depth; but thanks to that spirited and enterprising miner, Mr. Peter Watson, who by opening up Wheal Grylls Mine also opened the eyes of those blind unbelievers, and convinced the world—geologists that theory when imperfectly understood has sometimes misled men for years, until, in fact, practice has convinced them of their former errors. I would not in this report have drawn your attention to these facts had not the mine I am reporting upon been situated in the same locality, and the rich bunch of the found in No. 6 lode brought vividly to mind mining of the past. The present end driving on the lode just mentioned is unproductive, but looks favourable for a change.—No. 8 lode: This is a splendid looking lode, composed of capel, spar, and mudi, but as it has been driven on only 3 fms. its value can better be anticipated than ascertained. There is a level driving south on a cross-course, and it is expected that 20 fms. in advance of the present end will intersect North Great Work lode, when even better results than what I have already stated may be reasonably expected. There are several lodes besides those I have reported on well worth a spirited trial. The engine-house, &c., is fast approaching completion, and part of a 40-in. cylinder-engine brought on a mine waiting the drivers' work of a more dilatory set of masons. When the engine is set to work, you will be in a position to prove the different lodes under adit, and I would remark from the present underlie of Gregory's lode and No. 3 lode they will form a junction about 20 fms. below the adit level—a very important point to be arrived at, and will most likely greatly enhance the value of the mine. Taking into consideration the favourable position of this mine, the numerous lodes traversing the sett, the kindly character of the lodes, and rich bunches of tin already discovered, I have only one conclusion to arrive at, which I shall sum up in the following words:—Let due regard be paid to the management of the mine, and to the proper development of those lodes, and the time is not far distant when you will be in possession of a highly remunerative property.

ST. JUST CONSOLS (Special Report).—R. P. Goldsworthy, April 14: I have carefully inspected the lodes contained in this extensive sett, which are large, and of an highly promising character. The Guide lode and Casley's lode, which are now being operated on, are producing tin-stuff sufficient to pay the wages cost of the mine at the present shallow point; these lodes will doubtless improve in depth. A more extensive mode of working will put the mine into a paying state, and ere long place it on the list of dividend-paying mines. Your machinery is ample, and in perfect working order, and the stamp-floors are laid out on the most modern principle.

ST. JUST CONSOLS.—J. Cartwheel, April 14: All our works have been progressing satisfactorily. The lode east and west of Guide shaft is looking much better, and I think when we sink deeper we are likely to have much better tin-stuff. We shall have more tin for sale by the next pay than in any four weeks before. We are still extending the 10, east and west from the engine-shaft, by the side of the lode, and intend cutting into the lode next week. These mines have produced more tin last week than any week since we commenced operations.

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## THE SLATE QUARRIES AND GOLD MINES IN THE ISLE OF MAN.

The Glenrusen and Dalby Slate Quarries, in the parish of Patrick, are well worthy of inspection by every tourist who pays a visit to that lovely island. The road from Douglas (the chief town) to the quarries runs through some of the most picturesque and interesting scenery in the island. Starting from Douglas by the Peel road, the tourist cannot but be in raptures with the glorious panorama. On arriving at St. John's, where stands the ancient Tynwald Hill, we descend into a valley, shaded by the majestic mountains of Slemish, and after about half-an-hour's drive approach the village of Glenmay, where is situated the beautiful waterfall which gives the village its name. Proceeding about a mile up a stony, broken road, which leads right up into the heart of the southern division of the chain of mountains which form, at its base, the backbone of Mona, we arrive at the Glenrusen Slate Quarries, which have been worked by the Isle of Man Slate and Flax Company, but are now being transferred to the Isle of Man Slate and Gold Mining Company, which has been formed for the purpose of working the gold-bearing quartz recently found on the company's property, and which it is expected will turn out a most valuable discovery. The works of the company are situated in a little valley, through which runs a rushing torrent, affording ample water-power for working the machinery, and high upon each side tower the lofty mountains, the whole of the ponderous bodies of which have been proved, after careful inspection by experienced geologists, to be one mass of slate, containing many millions of tons of that valuable metal. The company has obtained from the Crown a lease of a seat, comprising 7000 acres of this slate land, and since the discovery of the auriferous quartz veins running through this district, it is absolutely impossible to tell the value of the property; but there can be little doubt that, when properly developed, it will outstrip in importance all the great mining undertakings of Mona, and the quarries may ultimately rival in celebrity the noted Penrhyn Quarries, in North Wales.

A careful survey of the district was made some time ago by Mr. John Taylor, F.G.S., and he says:—"The slate quarries of Glenrusen are situated in a formation of the same, or nearly the same, geological age as the famous slate quarries of North Wales. The slate found here are of a kind well suited for mercantile purposes, and are as well adapted for ordinary building use as any now in the market." Mr. John Clarke, a practical geologist, also inspected the quarries, and he states:—"I have no hesitation in saying the slates are equal to any I have seen in Wales. The quality is of a superior kind, and embraces all the best features required for slating purposes. It is well laminated, and its cleavage is clean, smooth, and even." Capt. Francis, the manager of the celebrated Penrhyn Quarry, has recently inspected the quarry twice, as well as eleven distinct quarries opened on the seat, and his report of each inspection is highly satisfactory. In his report, dated Oct. 13, 1863, he observes, upon the Glenrusen Quarry:—"I am much pleased with the general appearance of the slate vein, and also of its quality. The dip of the vein is very similar to the Festiniog quarries, in North Wales, but it has this advantage, that it can be worked more economically, owing to the vein running with the hill, and not into it, like the Festiniog, consequently it will not be necessary to leave good pillars of slate to support the hill, as is the case in the latter quarries. The cleavage of the slate is very good, and the colour very like the Merionethshire slates." The quarries have also been inspected by Mr. W. R. Williams, mining engineer, of Dolgelly, who fully confirms the views of Capt. Francis.

Capt. Thomas Williams, of Coedpoeth, near Wrexham, Denbighshire, an extensive and experienced miner and slate quarryman, has also examined the quarries and auriferous quartz veins (in the discovery of which latter he rendered valuable assistance), and he entertains a very high opinion of the whole of the seat. The company have secured his services as manager of the mining department, which, with the aid of a practical gold mining captain, will, no doubt, be conducted in a scientific and vigorous manner. The company is at present engaged in working a slate mountain on the southern side of the Glenmay River, and it is intended, as was advised by Capt. Francis, to work this mountain by means of a series of galleries, one above the other, starting the first gallery about 15 yards above the stream, and limiting the depth of each gallery to 15 yards. By this means the company will be enabled to employ any number of men in carrying on the work, and, as stated by Capt. Francis, "if it be well and expeditiously carried out, in a short time this quarry will prove a very valuable investment."

Of late years the consumption of slates has been immensely increased, and they have risen in value accordingly, and at present there is great demand for them in the market. Indeed, so great is the demand at the Penrhyn Quarries that it is impossible to obtain any slates, unless the order is given for them a year, or even eighteen months, in advance; such being the case, there is no doubt the Glenrusen Slate Quarries will turn out a most profitable investment, and, with the other public works on the island, create a great influence on the material prosperity of Mona.

The company has at present about 150 men at work, under the management of Capt. Lobb, who has had great experience in both mining and quarrying matters, and who about two years ago was fortunate enough to discover this valuable slate property. The machinery is capable of turning out, completely finished, many thousand slates in a day.

With reference to the discovery and prospects of the gold mines, Mr. W. R. Williams, of Dolgelly, who has recently inspected the various lodes, and reports most favourably thereon, remarks:—"My first day's investigations were confined to the Glenrusen district, and that of Glenmay, in the examination of the quartz veins and slate beds, and during my observations I was much impressed with the close resemblance of the external characteristics and geological features of the district to that of some parts of North Wales, particularly the Merionethshire gold district. The Glenrusen mountain quartz lode, bearing east and west, has very favourable indications of being auriferous. One great feature in the quartz veins in this district for gold mining would appear to be the absence of several other minerals, which in Wales have often proved troublesome in the reduction process, whilst they have been of no commercial value for any other purposes. Should the same character of quartz thus hold good in depth, and the yield of gold prove satisfactory, a much larger percentage ought to be extracted therefrom by even a less economical method of treatment than is often otherwise necessitated."

Several samples of quartz have been analysed by practical assayers, and the result of five separate and independent analyses has been that the quartz has varied from 1 oz. 2 dwt. 22 grs. down to 5 dwt. 5 grs. per ton; and when we consider, as Mr. W. R. Williams observes:—"The established fact that  $\frac{1}{2}$  oz. of gold to the ton of quartz is capable of affording good dividends," the several assays are highly important and satisfactory. In order to fully develop the property, the company have entered into negotiations with a view to forming a branch line from the quarries to the line of railway it is proposed to form from Douglas to Peel. It has, of course, cost a large sum of money to develop the quarries, even to their present extent; but the proprietors have been working their property with great energy, and there is no doubt the results will amply compensate them for their exertions and outlay.

**CORNISH PUMPING ENGINES.**—The number of pumping engines reported for Feb. is 34. They have consumed 2444 tons of coal, and lifted 19.0 million tons of water 10 fms. high. The average duty of the whole is, therefore, 52,200,000 lbs. lifted 1 ft. high, by the consumption of 112 lbs. of coal. The following engines have exceeded the average duty:—

	Millions
Carr Brea—76 in.	52.2
Cook's Kitchen—50 in.	56.7
Crane—70 in.	74.8
Dolcoath—Harriott's 60 in.	52.7
Great Wheal Busy—Harvey's 85 in.	62.4
Great Work—Leeds' 60 in.	64.2
North Roskar—Doctor's 70 in.	56.4
North Wheal Croft—Trevenson's 80 in.	52.5
South Wheal Frances—Marriott's 75 in.	65.4
Treloweth—60 in. ....	59.8
West Cardigan—Elliot's 50 in.	58.1
West Wheal Seton—Harvey's 85 in.	62.3
Wheal Ludcote—Willcocks' 50 in.	60.1
Wheal Margery—Welsley's 45 in.	65.1
Wheal Seton—Tilly's 70 in.	57.2
Wheal Tremayne—Michell's 50 in.	58.1

**CORNISH ENGINES.**—A very interesting paper on this subject was read by Mr. A. FRASER, at the Society of Engineers, on Monday, of which the following is an abstract:—The author commenced by tracing the history of the Pumping-Engine, and detailed the various improvements made in it up to the present time; and, after describing the various parts of a Cornish pumping-engine, and the manner of its working, maintained that for pumping purposes the single acting Cornish engine possesses advantages over any other form of engine, being more economical in fuel and attendance, and more adapted for the peculiar requirements of a water-work on a large scale than the double cylinder rotary engine. The principal objections that have been made to the single acting engine, with a loaded plunger, are—that although the height to which the water has to be raised varies according to the various levels of the houses supplied, the weight lifted by the engine is always the same, and that the maximum that the intermittent nature of its action tends to burst the mains, and break its own parts, and that the practice of using steam at a very high pressure, and expanding it on a large scale, is accompanied with danger and inconvenience. These assertions were met by the remark that the inconvenience of raising the uniform weight for the variable pressure does not apply to this form of engine only, but must be the case with any description of engine employed for this purpose, and is not avoided in those establishments where crank engines are employed, where a reservoir is usually constructed at the maximum height for the supply of the highest house in the district, into which the water is pumped, as well for the low service as for the high; also, that the safety of the machine and accompanying pipes is not endangered by its intermittent action, and that, in fact, each stroke of the engine being a complete operation, and no moment being carried forward, the pause which takes place brings everything to a state of rest, and in case of an unforeseen breakage of the engine, if provided with a stand-pipe, simply stops, which is not the case with an engine driving a heavy fly-wheel. As a proof of the durability and freedom from accident of these engines, instances were cited of single-action Cornish pumping-engines in London that have been at work night and day for twenty years without repair, and, after that time, have been overhauled, and made as good as new for a small sum. To show the economy in fuel, it was mentioned that the usual working duty, with small coal at 11s. per ton, is 65,000,000 to 75,000,000, care being taken to provide a sufficient number of boilers to consume not more than from 3 to 4 lbs. of coal per square foot of firegrate per hour. It was also stated that the cost of attendance was equal to 1d. for every 22,000 gallons of water lifted. The author pointed out the causes of this great economy—that the greatest attention was paid to the prevention of loss of heat by radiation; that by the use of the cylinder jacket the steam is admitted to the cylinder at a very high temperature, and exerts its full effect just when it is required—to overcome the vis inertia of the stroke of

water, which cannot be accomplished so well in the crank engine—the facility given for a lead in the exhaust and equilibrium valves, and the advantages derived therefrom. He stated that three-fourths of the water supply of London is carried out by engines on the Cornish principle, and that the best duty is performed by the largest engines that have yet been erected with cylinders 90, 100, and 112 inches in diameter. Also that the single-action Cornish engine is peculiarly adapted for a water supply that varies in quantity hour by hour, as is the case in the metropolitan districts, because the indoor, or steam-stroke, is performed in the same time, and at a speed of about 600 feet per minute, whether the engine is required to work one stroke per minute or twelve strokes; therefore the proportion of steam used to water pumped remains the same; but in the crank engine, while working slowly, a considerable loss is sustained by the steam being left on long enough to take the crank over its centre. The author, in conclusion, referred to the improvements introduced by Messrs. Harvey and Co., the eminent manufacturers of Cornish engines, of Hayle Foundry, Cornwall, and the improved four-beat valve, patented by Mr. Husband, of the same place.

**DOLCOATH ACCOUNT.**—An account was held, as usual, at the mine, on Monday, when a dividend of 8s. per share was declared. It is a matter of no little importance to the general interests of Cornwall to find this good old mine continues so full of health and vigour. Influenced by the example of Dolcoath, all the mines in the vicinity of Camborne and Redruth have been led to persevere in sinking and in driving the deeper levels. In very many cases success has already crowned their efforts, and many others are in a fair way to realise the same pleasing result. Dolcoath is one of the most ancient mines known, and has a history lost in the obscurity of ages. The length of the sett from east to west is about 550 fms.; its width from north to south is about the same. From this length metallic ore to the known value of over 5,000,000/- have been returned, which may be estimated at about 10,000/- per fm. for the width of the sett. The present returns of tin are about 6000/- per month; and, from a statement made by the respected manager, Capt. C. Thomas, there are no symptoms of exhaustion. The present discoveries more than keep pace with the returns, and in all probability the veteran of 100 years will continue to yield large quantities of tin for ages to come to supply the wants of the world, to benefit the working population, and to enrich the fortunate shareholders.

**SALE OF MINES BY AUCTION.**—On Thursday next, Mr. T. P. Thomas, the mining auctioneer, will offer for sale three important mining properties, situated respectively in Devonshire, Wales, and Ireland, each being provided with the necessary plant and machinery. The East Wheal Martha, at Lamerton, in Devonshire, commands attention from the circumstance of the rapidly improving prospects of Great Wheal Martha, adjoining, the ore sold from which now realises very large sums bi-monthly. The Cwmbran is situated at Llangadock, in Carmarthenshire; the whole property is in full working order and condition, and immediate possession can be had. A reference to the quarterly lead sales, published in the *Mining Journal*, will show that the mine has long been making returns—a little more capital being all that is required to make it profitable. The third property is the Crookhaven Mine, with the valuable machinery, plant, materials, surface works, and buildings thereon, situated in the county of Cork; 20,000/- has been expended upon the mine, which is now on the eve of becoming profitably productive. Upon page 282 the advertisements and descriptions of the several properties will be found.

**VOTING PAPERS FOR PUBLIC COMPANIES.**—The Member for Devizes, Mr. Darby Griffiths, has obtained leave to bring in a bill which will be of the greatest possible advantage to shareholders in joint-stock companies, its object being to afford facilities for voting by means of voting papers. He proposes to leave the whole of the powers of shareholders and directors exactly as they are, and does not interfere with the power of selling proxies. His recommendation is simply that should a poll be demanded on a question moved and seconded at a meeting, the voting papers should then all be sent out, and the shareholders be enabled to vote by means of them.

**NEW MOTIVE-POWER MACHINE.**—The invention of Mr. Salomons, patented as a communication from the inventor to M. de Angelis, has been recently specified. The specification filed by Mr. Henry, patent agent, Fleet-street, describes the apparatus as consisting of two hollow drums on an inclined axis, caused to revolve by the consecutive dropping of suspended weight carrying levers, with studs thereon, which abut against stops on a platform. The axis carries wheels which travel upon other platforms and the drums being caused to revolve in the circular direction of the platform, as well as on their own axis, transmit rotary motion to a central axis, whence the power may be communicated as desired. The levers are so arranged that the studs of the opposite ones of each drum confront those of the other two of the same drum. The weights of the two drums are relatively so disposed as to break joint, or act without intermission as to their combined operation, and so get over the dead point.

**MANUFACTURE OF STEEL.**—Some 12 months since we noticed the publication by Mr. George Ede, who has long been employed in Woolwich Arsenal, of a useful little pamphlet, intended especially for the guidance of his fellow-workmen, entitled "The Management of Steel, including Forging, Hardening, Tempering, Annealing, Shrinking, and Expansion," and we are glad to find that the first and second editions have been so rapidly exhausted that the third is now before us. Mr. Ede very justly observes that the management of steel claims notice on account of its contributing so essentially to the perfection of all other arts. The subject has been ably and systematically treated by Mr. Ede, the success with which he has given the result of his long experience in a thoroughly readable form, being as near as may be complete. The several treatments included in the title to the book are each considered in a separate chapter, and so many valuable hints are given that the book cannot be consulted either by makers or users of steel without advantage being derived. With regard to the forging of steel, he observes that the heat the steel received is judged by the eye; and care should be taken not to use a higher degree than is absolutely necessary to effect the desired purpose, and to use as few heats as possible; too frequent and overheating steel abstracts the carbon, gradually reducing it to the state of forged iron again. In the succeeding chapter he points out the chief causes of steel breaking in hardening; when practicable the hardening should be effected with the skin on, but where tools are to be made, which cannot be ground after hardening, greater care must be taken by the workman. Mr. Ede enters very fully into the consideration of the hardening of various forms and sizes, his object being to induce dependence upon a knowledge of the means of avoiding failure in manipulation as a substitute for dependence on luck. Alluding to the tempering of steel, he tells us that a rod of good steel in its hardest state is broken almost as easily as a rod of glass of the same size, and this brittleness can only be diminished by diminishing its hardness; and in this management consists the art of tempering. The colours which appear on hardened steel previously brightened are a light straw colour, a dark straw, gold colour, brown, purple, violet, and deep blue; these colours appear in succession as the hardness gets reduced; the various modes of tempering are then explained, and the expansion of steel next occupies attention. It is a well-known fact among those who are in the habit of hardening, that the hardening of steel increases its dimensions. To remedy this, Mr. Ede tells us to anneal the steel about three times before the article is completely finished, and he finds that articles treated in this way keep their size better in hardening than if the steel were only annealed once. The remaining portions of the work are also treated with the greatest ability, and as the author has been for many years almost exclusively employed in the branch of business, full reliance may be placed in his statements.

**LIFE, TIMES, AND SCIENTIFIC LABOURS OF EDWARD SOMERSET, MARQUIS OF WORCESTER.**—Mr. Bernard Quaritch, of Piccadilly, announces for publication this memoir of the inventor of the steam-engine, by Mr. Henry Dicks, civil engineer. A reprint of the "Century of Inventions," with a commentary on it, is to accompany the work. It will be highly interesting to see in a collected form the various scattered materials relating to this distinguished nobleman; and it is really surprising that since the first edition of the "Century" in 1663, to the present time, only the most meagre biographical accounts are on record in reference to its noble and ingenious author.

**DENBIGH WATER WORKS.**—The progress of this enterprise has now been such that the water is brought into the town. It appears that in 1862 Mr. Wm. Richardson, C.E., of Birmingham, and lessee of the Denbigh Gas Works, found that there was a source at Llewesog, about three miles from Denbigh, peculiarly adapted for the supply by gravitation of a beautifully fine and soft water, sufficient in quantity, at the usual average of consumption, for the increase of many years. A company was quickly formed, and the Act of Incorporation obtained last session, and within ten months the works have been sufficiently executed for the water to be brought into the town.

**ECONOMY IN DRESSING TIN ORES.**—Everyone engaged in dressing tin ores should inspect the highly interesting and economical process now adopted by Capt. Teague, at Tintroft Mine, near Redruth, by means of large circular horizontal buddies, all worked by water-power. Upwards of 60 of these, which are, perhaps, 12 ft. in diameter, with a circular almost self-acting action, are driven by one 4-foot wheel with about 15 inch breast; and there are 100 of this description constantly at work on the mine. Notwithstanding the amount of machinery employed here—probably more than in any other mine in 600 persons constantly engaged.—*West Briton*.

**NEW COLLIERY.**—Ground has been broken for a new colliery on the very edge of Birley Common, upon, it is said, a highly ingenious principle. The first sod was in a spirited manner extracted by a London lady, amidst hearty rejoicing and cheers from the assembled company.—*Newcastle Daily Journal*.

**MOSELEY GREEN COAL AND COKE COMPANY.**—A call of 5/- per share was made yesterday at the Court of Bankruptcy on all the contributors, giving each contributor credit for the amount he has paid on account of the call. Mr. Roxburgh and Mr. Bagley appeared as counsel, Mr. Hutton as the accountant.

**FATAL ACCIDENTS.**—At Tincroft Mine, on Monday, Richard Hocking was killed by falling 40 fms. down the shaft. He leaves a wife and four children provided for.—On Thursday morning an explosion occurred at the Cornwall Blasting Powder Company's Works, near Truro, by which two lives were lost.

**LONDON GENERAL OMNIBUS COMPANY.**—The traffic receipts for the week ending April 10 were 11,211/- 10d.

\* \* \* With this week's Journal we give a SUPPLEMENTAL SHEET, which contains a Plan of the Great South Chiverton Mining District—The Ventilation of Mines, by Prof. Smyth—Plain Papers on Geology: No. I—Manchester Association for the Prevention of Steam-boiler Explosions—Immense Casting in America—Mining in Australia—Monthly Summary—Foreign Mine Reports, &c.

## The Mining Market; Prices of Metals, Gres, &amp;c.

METAL MARKET—LONDON, APRIL 15, 1864.

COPPER.		Per Ton.	BRASS.		Per lb.
Best selected....	p. ton	101 0 0	Sheets	.....	94 1/2-101 1/2
Tough cake.....	"	98 0 0	Wire	.....	84 1/2-94 1/2
The	"	98 0 0	Tubes	.....	94 1/2-94 1/2
Burna Burna	"	100 0 0			
Copper wire, p. lb.	1 0 1/4				
ditto	1 0 1				
Sheathing & bolts, p. ton	105 0 0				
Bottoms	110 0 0				
Old (Exchange)....	91 0 0				

mediately resold to consumers at \$50 to \$52 cash. New York importers to March 1<sup>st</sup>, 1864, 5817 tons; ditto to 1865, 4174 tons. American numbers on Clyde cost 60s. to 62s.; cost \$45 to \$46 1/2 cash to lay down here direct.—**HAR IRONS:** Prices from store are—refined, \$140; common, \$130; ex American Mills, \$115 to \$120; common, \$125 to \$130; refined, 4 months orders, 4 per cent. cash. The mills generally very full of orders, and many are unable to contract further.—**SCAF IRON:** is controlled here by a few holders, who are at 65 to 70.—**OLD RAILS:** Holders, \$65 to \$70.—**LEAD:** is firm at 11s. 1/2 to 12s from ship or in whole parcels; store lots are \$12 1/2 to \$13 1/2. Stocks very small; demand fair.—**SPELTER:** is firm at 12s 1/2 c., but the ant-cipations of a further advance are not likely to be realized. The opening of navigation in Europe may prevent any further increase in price. In England speleter has declined 20s. sterling a fm. per ton.—**IRON:** is firm at 12s 1/2 to 12s higher per ton.—**IRON:** 1s. 1/2 c. to 1s. 1/2 c. per ton, and 47 1/2 c. to 48 c. for English. Store prices 1/2 to 1c. higher per ton.—**IRON PLATES:** are in fair demand at \$16 1/2 to \$16 for IC charcoal; \$18 to \$14 1/2 for IC charcoal; \$13 1/2 to \$14 1/2 for IC coke tin; \$11 1/2 to \$11 1/2 for IC coke tene.—**ANTRIM:** is fair demand at 16 to 17 c. by the cask, and 1c. in small quantities.—**IRON:** is firm at 14s to 15c. Stock light.—THOMAS J. FOPE.

Business has been very brisk in the MINING MARKET, notwithstanding the settlement of the fortnightly account on Thursday, which was particularly heavy in a few mines, and occupied the dealers' attention for some days. Money was decidedly scarce, but, on the whole, the account passed tolerably well. We stated last week that the monthly meeting of copper smelters had passed off without any change having been made in the price of that metal, and that the standard for ore was better; and we were rather surprised, therefore, to find that a fall of 5s. per ton took place in copper early this week. Among the reasons for this fall, we are told that a deal of speculation had been going on in copper early in the year, and soon after it had risen 15s. per ton. Money became tight at 8 per cent., and the failure of a large speculator, and other circumstances combined, have tended to keep the market in an unsettled state ever since. Wheal Grenville shares early in the week advanced to 10; on Wednesday they declined to 9 1/2, when, money being tight, many of the speculative buyers had to realize; on Thursday they rose to 10 1/2, buyers, and now leave off 11 1/2 to 12; the mine has improved in one or two points, and we understand that several agents have again inspected the mine this week, and their reports fully confirm the opinions we expressed of the mine in this article three months ago, and when shares were at half their present price. East Grenville shares have also risen to 15s., 17s. 6d. Nangiles shares had been flat, at 28 to 29, but improved on Friday to 32, 34; the lode in the shaft, we are informed, has improved to 50s. or 60s. per fathom. East Caradon shares advanced to 31s., 32s., and leave off 30s. to 31; the 50 east is worth 20f.; the 60 east, 10f. per fm. South Lode, the 70 west, 45f. per fm. The ends in the aggregate are now worth 148s. per fm. Bryn Gwilog, 30 to 32; Cargoll, 37 to 38. Clifford Amalgamated flat, at 33s. to 34s.; Condurrow, 100 to 105; East Basset, 66 to 68; East Carn Brea, 6s. to 7s.; East Wheal Russell, 4 to 4 1/2. Great Laxey shares have advanced to 6s., 6 1/2. Great Wheal Fortune, 15s. to 16s.; Hindgton Down, 3s. to 4; North Downs, 35s. to 37s.

North Crofty shares have not been quite so firm, and leave off 4s. to 5; at the meeting the accounts showed a balance against the adventurers of 184s. 5s. 7d., and a call of 1s. 6d. per share was made. The returns for the next four months are estimated at 10 tons of tin per month. Wheal Buller, 36 to 38; we have heard of a project which, if it could be carried out, might materially assist this immediate district, and also benefit the shareholders. It is to amalgamate the present Buller, Copper Hill, and the old Buller in one large company. There are several points of great interest in each of the mines that ought to be developed, but which remain in abeyance, owing to the present necessarily limited mode of working. If a price were fixed for the shares in each mine, and a new and influential company formed, to purchase and amalgamate the whole, giving the present holders the option of continuing their interests in the new concern, we believe the entire management would be transferred to it; and valuable discoveries might soon result from more extended operations. North Treskerby, 3 to 3 1/2; a good lode of ore is making its appearance in Treskerby's shaft, and a new lode has also, we hear, been intersected in the 47 cross-cut, 18 inches wide, and producing rich stones of ore. Sithney Metal, 4s. to 5s.; Hallenbeagle, 2s. to 2 1/2; Wheal Rose, 5s. to 56s.; Pendean, 6 to 6s.; Prosper United shares have declined to 5s., 6s.; Providence Mines, 41 to 42; Sithney Carmeal, 6 to 6s.; South Caradon, 45s to 46s.; South Tolgus, 37 1/2 to 40s.; Stray Park, 31 to 32; Seton, 200 to 210, ev. dividend of 4s. per share declared at the meeting; West Wheal Vor, 3s. to 3 1/2; Wheal Basset, 8s. to 90s.; Wheal Chiverton, 12 to 12 1/2; Wheal Edward, 1 to 1 1/2; Wheal Mary Ann, 13 to 14; Wheal Seton, 197 1/2 to 202 1/2, ex dividend of 4s. per share; Wheal Trelawny, 23 to 24. Wheal Unity, 6s. to 8s.; the agents report a good improvement. Retallack, 6s. to 8s.; Wheal Croesor shares have been firmer, and leave off 45s. to 46s.; North Shepherds, 6 to 6s.; Grylls Wheal Florence, 3 to 3 1/2; West Wheal Metal, 4 to 4 1/2; Prince of Wales, 4s. 6d. to 5s. 6d. Wheal Treloeweth shares are firmer, and more in demand, at 2s. to 3 1/2; the stope west of sump-winze is worth 50s. per fm.; the stope east of the lode is worth 30s. per fathom; the sump-winze below the 144 fathom level is worth 35s. per fathom. A good sampling is being prepared.

Wheal Kitty (St. Agnes), 7 to 7 1/2; the ends are valued at 12s. per fm.; the tin sales for the two months are estimated at 40 tons; and on the 29th the usual dividend of 1000s. will be declared. Great Busy, 4s. to 5s.; Oxford's shaft is worth 30s. per fm.; the 130 east, 30s.; the winze below the 130, 50s.; the stope in back, 35s. St. Day United, 10; the 184 fm. level east is worth 30s. per fm.; Offord's shaft, 50s.; the 184, east of Billing's, 12s.; the 97 west, on Garby's lode, is worth 4 tons of copper ore per fm. At Kelly Bray the 25 east has greatly improved; the lode is 2 ft. wide, of a most promising character, composed of mastic, black oxide of copper, producing 1 ton per fm., and likely further to improve. At Gwagton the 36 end is worth 1s. to 2 tons per fm.; in back, 6 to 8 tons per fm.; and the sampling for the month will be 100 tons of copper ore. Great South Chiverton is another new mine just started, and it adjoins West Chiverton to the south. At a meeting, yesterday, a call of 10s. per share (30000.) was made, and the shares are quoted 2s. to 2 1/2. West Chiverton flatter, at 77 1/2 to 80; the sale of ore for the month will be the largest ever made from the mine—170 tons. The 80 west, on Valpy's lode, has improved to 50s.; the 80 west, on William's lode, 70s. per fm. Wentworth, 16 to 17; Mineral Bottom, 7 to 7 1/2; Chiverton Moor, 5s. to 6s.; Chiverton Valley, 5 to 6s. East Lovell shares have advanced suddenly to 16s., 17s.; the mine has improved in one or two points; and, owing to heavy "bearing" transactions, shares very difficult to get. Great Wheal Vor, 84 to 85; the tin sale for the month is 43 tons 12 cwt. The lode at Ivey's shaft is worth 70s. per fm.; the 147 end, 100s.; the 174 east, 120s.; and the 174 west 80s. per fm.

On the Stock Exchange there have been numerous transactions in Mining Shares during the week, and the tone of business, on the whole, was better. The following quotations were officially recorded in British Mining Shares:—East Caradon, 32s., 32 1/2s., 32 1/2s., 32 1/2s.; Grenville, 9s., 9 1/2s., 10s.; East Wheal Russell, 4s., 4 1/2s.; Great Wheal Vor, 35, 34, 34; North Wheal Crofty, 4s.; Chiverton, 12s.; East Carn Brea, 6s.; Great South Tolgus, 3s.; Hindgton Down, 3s. In Colonial Mining Shares the prices were:—Cape, 13s., 13 1/2s., 13 1/2s.; Port Phillip, 1s., 1s., 1s.; Yudanamutana, 3s., 3 1/2s., 3 1/2s.; Australian, 1s. In Foreign Mining Share the prices were:—Alamillos, 1s., 1s., 1s., 1s.; Cobre, 36, 36 1/2s.; Fortuna, 3s.; St. John del Rey, 46s., 47s.; United Mexican, 6s., 6 1/2s., 6 1/2s.; Linares, 6, 6s.

IRISH MINE SHARE MARKET.—Owing to the attention and money absorbed by the many new financial projects brought before the public, our old-established and steady-going steam and mining companies have for the last two or three weeks been so much neglected, compared with the interest bestowed upon them in quiet times of speculation, that it was scarcely worth while to specially notice the transactions in mining shares which have really taken place during that time. That prices should have been depressed was but the natural result of the temporary neglect of these securities, and that the fall in price was in no particular instance of magnitude is certainly due only to the general *bona fide* value and stability of the mines in our best mining districts. Nevertheless, they all, more or less, shared the slightly adverse fluctuations, showing, however, for the last few days a gradual return to better quotations, in proportion as the weaker holders had been able to place their shares. Thus Mining Company of Ireland shares receded from their maximum price of 24s. to 23s., 10s., and 23s. 5s., and in a few instances were secured as low as 23s., but the small parcels offered were at all times readily picked up, and at present more would be bought at 23s. 2s. 6d. to 23s. 5s. (7s. paid), with a fair prospect of a further small advance. Wicklow Copper (24. 10s. paid) ranged from 12s. to 12s. 5s., but have within the last day or two risen to 12s. 10s., the directors having given notice of their intention to recommend at the next half-yearly meeting of the shareholders a dividend of 6s. per share, which is fully justified by the improving prospects of the mines, and of the market for their produce in copper and sulphur. Connoree shares

have been pretty steady at 18s.; they leave off, however, on sale at that price, buyers offering only 18s. 6d. Caryfort shares are but feebly supported at 16s. The shares of the General Mining Company for Ireland changed hands at 4s., and close in demand. On the 1st inst. Cape Copper shares (7s. paid) were officially marked 13s., but since that day no business appears to have been done in them.

COAL MARKET.—On Monday, the 21 fresh arrivals were, with three exceptions, steamers. The supply of coals, generally, was sufficient for the requirements of the trade, and the market continued a steady business, at last day's prices. Best house coal, 19s. 6d. to 20s. 6d.; seconds, 18s. to 19s.; Hartley's, 18s. to 19s.; manufacturers', 18s. 6d. to 16s. per ton.—On Wednesday there were 23 arrivals. There was an active demand for the few cargoes of coal for sale, and a clearance was effected at Monday's prices for household and manufacturers', and 3s. per ton upon Hartley's.—On Friday, the arrival of 80 ships was quite sufficient for the demand, and business continued quiet, at last day's quotations for all descriptions of coal. Hetton Wallsend, 20s. 6d.; South Hetton Wallsend, 20s.; Tees Wallsend, 19s. 6d.; Eden Main, 18s. 6d.; Gosforth Wallsend, 18s.; Harton Wallsend, 18s.; Riddell's Wallsend, 18s.; Framwellgate Wallsend, 18s.; Hasting's Hartley, 16s. 3d.; Tanfield Moor, 14s. 6d.; 9 cargoes unsold; 60 ships at sea.

THE COAL TRADE IN NEW SOUTH WALES.—Under date of Feb. 19 a correspondent in Sydney writes—"The coal trade is very dull here, and is likely to be for a long time, owing to the numerous companies that have newly started, and the get far exceeding the demand. Last week several parties sold coal at Sydney at 12s. per ton. It is impossible for many of the Newcastle companies to sell and make a profit at that price, and some of them must smash before long."

The Great South Chiverton Silver-Lead Mining Company has been constituted on the Cost-book System, in 6000 shares, for working the Ventongimp estate, at Perranzabuloe. The property is surrounded by the several Chivertons, now attracting so much attention—Chiverton, West Chiverton, South Chiverton, and Chiverton Moor Mines adjoining it. The relative position of the several mines will be seen from the plan, which appears in our Supplemental Sheet this day. It is mentioned that the lodes in Great South Chiverton and West Chiverton are in precisely the same channel of ground, and as the encouraging manner in which West Chiverton has opened out has increased the value of the mine tenfold in twelve months, the Great South Chiverton is looked upon with great favour. The property has been inspected and favourably reported upon by Capts. John Nancarrow, Martin George, W. H. Reynolds, J. Hampton, Henry James, and John Goldsworthy, who concur in the opinion that it is a speculation of the very first order, and likely to prove highly remunerative, while the outlay necessary to develop the mine will not be unusually large. The company's prospectus, and reports of the agents who have inspected the sett, will be found in another column.

The progress during the past week of other undertakings recently introduced, the publication of whose prospectuses has been already announced, is thus reported:—The British Copper Company close their list of subscriptions for shares on Wednesday, and the allotment will be at once proceeded with. It appears that the applications are in excess of the shares to allot. The last quotation was about 1 to 1 1/2 prem.—The East Wheal Vor Company, to the establishment of which, on the Cost-book System, we alluded last week, has been very favourably received, the shares being at present readily saleable at 5s. to 6s.—The Port Augusta and Northern Railway Company of South Australia have given notice that their subscription list will close on Thursday next. Owing to the importance of the railway as a means of facilitating the transport of ores from the northern mines—Yudanamutana, Great Northern, &c.—the fact of the greater portion of the shares having been taken up by the shareholders in those companies cannot excite surprise.—Bonelli's Telegraph are quoted 1 1/2 to 2 prem.—The Frontino and Bolivia Gold Mining Company have made satisfactory arrangements for sending out an efficient staff, and remittances are expected by July or August. The shares are quoted 4 to 4 1/2 prem.—That the immense advantages of conducting business with the limited liability secured by connection with public companies, as compared with embarking in speculations upon unlimited individual responsibility, daily becomes more extensively acknowledged is obvious, not only from the fact that two of our greatest bankers have combined their businesses with joint-stock undertakings, but also from the enormous excess of shares applied for in all the really promising undertakings launched. No less than 90,000 applications for shares in the Imperial Bank of China have been received, whilst there were only 10,000 shares to allot. In the Millwall Ironworks Company the applications at the close of the London list proved to be 140,000, though the number to be allotted was only 20,000. Many other new undertakings have been equally successful.—Imperial Bank of China are quoted 2s. to 3 1/2 prem.: and Millwall Ironworks, 3 to 3 1/2 prem.—The East India Financial Association, with a capital of 1,000,000, in shares of 50s. each, has been introduced by the Imperial Financial Company. The shares are quoted 2s. to 3 1/2 prem.

At the Dolcoath Mine two-monthly meeting, on Monday, the accounts for Jan. and Feb. showed—

Cr.—Copper ore, sold Feb. 4 .....	£ 640 8 7	
Tin ore, 17s. 13c. 1q. 24 lbs. ....	11,919 10 5 = £12,559 10 0	
Deduct—dues (1-24th) .....	523 6 7	
Poor and highway rates on dues .....	50 0 0 = 573 6 7 = £11,986 12 5	
Sundry small receipts, 18f. 11s. 6d.; extra carriage of tin, 6f. 11s. ....	25 2 6	
Total .....		£12,011 14 11

Dr.—Tutwork and surface labour cost and wages .....	£5168 13 5	
Tribute ditto .....	1217 12 11	
Merchants' bills, &c. ....	2595 0 2	
Vice-Warden's Court assessment .....	18 19 9 = 9,000 6 3	
Leaving a profit of .....		£ 3,011 8 8

Cr.—Profit .....	£3011 8 8
Balance, end Dec., 1863, brought forward .....	721 6 5 = £3732 15 1

Dr.—Paid quarter year's income tax on profit to Jan. 5 .....	£ 91 9 5
Dividend of 6s. per share .....	2864 0 0 = 2955 9 5

Leaving balance in hand .....		£ 777 8 8
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[The mine report appears among the Mining Correspondence.]

At West Wheal Seton meeting, on Tuesday, the accounts for January and February showed a credit balance of 2010s. 4s. 8d. The profit on the two months' working was 1143s. 1s. 6d. The ore money to come of credit of June account is nearly 5900s. A dividend of 1600s. (4s. per share) was declared, and 410s. 9s. 6d. carried to credit of next account. Capts. Thomas, Bath, and Jennings reported upon the various points of operation.

At the Wheal Grylls meeting, on Tuesday (Mr. Peter Watson in the chair), the accounts showed a balance of assets over liabilities of 305s. 2s. 2d. Details in another column.

At the East Wheal Grylls meeting, on Tuesday (Mr. Peter Watson in the chair), the accounts showed a debit balance of 288s. 4s. 7d. Details appear in another column.

At the Basset and Grylls quarterly account, on Monday, the accounts showed a profit of 70s. on the three months' working, and 35s. 9s. 1d. carried over to the next account.

At Furze Hill Wood Mines meeting, on April 2, the accounts showed a debit balance of 304s. 1s. 1d. A call of 1s. 6d. per share was made. The outstanding calls amount to 18s. 9s. 6d. Mr. Wm. Dodge was appointed underground agent (in the place of John Gregory, resigned) until the next general meeting, at a salary of 5s. 6d. per month.

At South Seton Mine meeting, on April 7, the accounts showed a debit balance of 625s. 1s. 1d. A call of 3s. per share was made. The present engine being nearly to the extent of its power, and the prospects of the mine justifying the erection of a steam-engine of not less than a 70-in. cylinder, the agents were requested "to purchase a second-hand engine of sufficient power; and in case they cannot, tender a bill for the erection of a new engine, and all convenient and necessary appendages." Capts. M. Bath and E. Higgins reported on the mine.

At Rosehill Hill and Ransom United Mines meeting, on March 29, the accounts showed a debit balance of 129s. 0s. 2d. The loss upon the quarter's working, ending with costs for Dec., was 134s. 0s. 3d.

At Caradon and Phoenix Consols meeting, on April 4 (Mr. T. Hender in the chair), the directors and agents' reports and statement of accounts were adopted. It was stated that there was about 6000. in the bankers' hands. Messrs. Hender, Ching, Hawking, Good, Couch, Pearson, and Budge were appointed directors, the consideration of their remuneration being postponed for twelve months. Messrs. Derry and Carter were chosen auditors. The mine is worked by a limited company, in 12,000 shares of 5s. 6d. each, and it appears that the first issue was fixed at 6000 shares; a deposit (upon the proportion remaining after allotment of the free shares to promoters) of 10s. per share having been paid, except on 214 shares. The property was formerly known as the Berrill Consols, and the purchase from Mr. Charles Pearson included the machinery, plant, and materials on the mine on Jan. 1, and the machinery is now being repaired and put in working order. The balance is said to be strictly available for the purpose

of carrying on the working of the mine, all the expenses of the incorporation, the purchase deed, and the renewal of expiring interests have been discharged. Capt. Wm. Richards, in his report, recommends that the engine-shaft be sunk to deeper levels, believing if Nos. 1, 2, and 3 lodes be properly developed a good mine will be the result.

At the Wheal Arthur meeting, on Tuesday (Mr. Peter Watson in the chair), a call of 1s. per share was made.

At the North Wheal Mine meeting, on Tuesday, a call of 2s. 6d. per share was made. After a lengthened discussion upon the question of dues, a resolution was unanimously passed to the effect that, in the opinion of the meeting, the dues should be permanently reduced to 1s.-20s both on tin and copper. The meeting was adjourned to Wednesday, by which time it was hoped the course which Mrs. Collier intended to adopt would be made known to the shareholders. A strong feeling was expressed at the meeting, and also in the numerous letters received from shareholders, that unless a considerable permanent reduction in the dues was

## GREAT SOUTH CHIVERTON SILVER-LEAD

MINING COMPANY.

On the "Cost-book PRINCIPLE." In 6000 shares.

BANKERS—Bank of London, Threadneedle-street.

BROKERS—Mr. William Lelean, 11, Royal Exchange; and Mr. Emanuel Gompers,

Crown-court, Threadneedle-street.

SECRETARY—Mr. Henry Chapman.

OFFICE, 11, ROYAL EXCHANGE, LONDON.

This company is formed for working the estate of Ventongimp, in the parish of Perranzabuloe, in the county of Cornwall. It is bounded by the Chiverton Moor Mine on the north-west, and the rich West Chiverton on the north. Chiverton stands to the north-east, and South Chiverton to the south. The sett extends eastward from Chiverton Moor Mine, side by side with West Chiverton, for several hundred fathoms, as will be seen by the map (see Supplement of this day's Journal); therefore its position as a mining property is second to none in the county of Cornwall.

The accompanying reports of well-known and experienced mine managers acquainted with this district will be read with interest, and cannot fail to command public attention. As before stated, the celebrated West Chiverton Mine, one of the best in Cornwall, its market value being £250,000, with every probability of its going much higher (about twelve months ago selling at £30,000), immediately adjoins this company's grant; and from the fact that the lodes in Great South Chiverton are in precisely the same channel of ground as West Chiverton, similar large deposits of rich silver-lead ores are almost certain to be met with, and cannot fail, when properly developed, to make a great and lasting dividend mine.

## REPORTS.

Jan. 14.—This sett is situated in the Chiverton district, in the parish of Perranzabuloe, in the county of Cornwall. It is upwards of 500 fathoms in length from east to west, and 400 fms. from north to south. It adjoins West Chiverton and Chiverton Moor Mines, the former extending the whole length of its northern boundary, and the latter the whole of the west and north-east, while Wheal Chiverton and East Chiverton are situated immediately to the north-east, and North Chiverton and other mines are a little further north. The stratum is a clay-slate, which prevails in all the productive mines in the neighbourhood, and from what is thrown up in draining appears to be highly congenial for the production of silver-lead, and of precisely the same character as that in which the lodes are now so rich in West Chiverton. But here no sort of mining operation has hitherto been attempted; it is purely virgin ground, yet it is evident from appearances presented in draining, although very near the surface, that the backs of lodes having an east and west direction have been crossed; and streams of water issuing from the places where these appearances presented themselves, together with the fact that lodes have been seen westward running in this direction, serve to confirm this opinion, and to leave no doubt but that lodes could at once be laid open. These lodes are parallel with those now yielding such quantities of lead in West Chiverton, and will be intersected by at least one cross-lode, seen to the north, and probably by others. The geological position of this ground resembles that of East Wheal Rose, which gave dividends to the amount of £286,000, and is certainly all that can be desired for the production of lead, and its relation to the neighbouring mines is such that when developed it can hardly fail to prove very valuable. Here, then, is a fine extensive sett, in the richest lead district in Cornwall, and adjoining the richest mine in that district, equally as well situated, and likely to be equally productive; and from my long experience in the district, and from observations made when connected with the East Wheal Rose and other neighbouring mines, on the character of lead deposits, and the position in which they are found, I consider this a speculation of the very first order, and think it will prove highly remunerative. I have, therefore, the greatest confidence in recommending it.

JNO. NANCARROW.

Jan. 14, 1864.—I have known this ground for 20 years, and was engaged in what is now called Chiverton Moor with the former workers for the whole time they worked, and know of lodes in the south part of Chiverton Moor which must run through the entire length of this sett, parallel with West Chiverton lodes, and in the same mineralised strata. This ground is situated in a pretty fall, similar to that of Old Shepherds and East Wheal Rose before laid open. The water rising from the backs of those lodes was much the same as the water rising from the backs of the lodes in this sett at Great South Chiverton. I have been engaged in several lead mines in this district for many years, chiefly Wheal Golden and East Wheal Rose, and had the advantage of knowing nearly all the lead mines in the district; and knowing how the ground is situated where the ore has been found in those rich lead mines, I have no doubt a good mine will be found here. This ground is south of West Chiverton, the rich lead mine, and south-east of Chiverton Moor, and joins both mines; it is about 500 fms. long, and 400 fms. wide, and it is my opinion that when laid open it will be one of the great prizes of the district.

MARTIN GEORGE.

Prospect-place, Redruth, Feb. 24, 1864.—I have, in accordance with your request, examined the sett called Great South Chiverton, and I now beg to lay before you some general remarks relative to its apparent mining capabilities. As you will perceive, my observations must necessarily assume a general character, from the fact that the ground has not up to the present time been tested as a field for mining enterprise. The sett is situated in the parish of Perranzabuloe, and forms the southern boundary of West Chiverton; it extends from east to west, somewhat between 500 and 600 fms., and from south to north about 400 fms. As far as I could ascertain, no lodes have up to the present time been laid open, but I perceived indications amongst the stones thrown up in the formation of a surface drain, which would lead me to suspect that some of them had been detached from a mineral vein, and it has been ascertained that a large lode, seen in an adjoining mine, must pass through this sett; in fact, this district abounds in mineral lodes, and there is every probability that many may be found traversing this property. The stratum is similar to that of the adjoining West Chiverton, whose rich lodes encourage the belief that mining operations would be attended with considerable success in this particular direction.

W. H. REYNOLDS.

Perran Porth, March 8, 1864.—I have examined this sett twice or thrice, and find it situated in the estate called Ventongimp, and immediately to the south of West Chiverton and Chiverton Moor, on parallel lodes, and on which little has been done by way of trial; but from what I saw, and believing that an elvan course runs through the ground, I think it well deserving a spirited development. Little need be said about the district, it being the richest for lead ever discovered in the West of England; and considering the proximity of this to the Chiverton Mines, I think it sufficient to inspire great confidence in the undertaking.

J. HAMPTON.

March 14, 1864.—Since my first visit to this mine rapid progress has been made. There are four lodes seen, three of which are parallel with West Chiverton lodes. The north lode is 2 ft. wide, the middle or centre lode is from 3 to 4 ft. wide, the south lode is 1½ ft. wide; these lodes are about 30 fms. apart, and carry a fine flotilla, with a fine mineralised gossan. The fourth lode is a north and south lode, and crosses these lodes at right angles; this lode is 4 ft. wide, and looks well. These lodes are seen 9 ft. deep, and present a fine appearance, with water flowing freely from their backs; they are embedded in clay-slate, and cannot fail to yield large deposits of lead ore. This mine is side by side with West Chiverton and Chiverton Moor Mines. The geological position of this mine is everything that can be desired, and it is my opinion that it will not be second to any mine in the district when laid open. The men are busily engaged in bringing up a drain, and opening on the backs of these lodes. I think it cannot fail to open a good mine.

MARTIN GEORGE.

March 15, 1864.—This extensive sett, in the parish of Perranporth, includes all the estate called Lower Ventongimp, except a small portion on the north, included in West Chiverton. We commenced operations here about three weeks ago, and our efforts have been eminently successful, for four lodes are already discovered, and we appear to have crossed another in a drain towards the north part of the sett, but of this we cannot yet speak positively. Of the lodes discovered three run east and west, and one north and south, crossing all the others. The east and west lodes are parallel with the lodes of West Chiverton, are from the middle of the sett northward, and are included in a width of about 60 fms. The north one of these appears to be about 2 feet wide, composed of gossan and flotilla. The middle lode is from 3 to 4 ft. wide, also gossan and flotilla, with a little mud. The south one is a fine gossan lode, but we cannot yet determine its width. All these lodes look well for the production of lead, and the killas, so far as our explorations have extended, is all that can be desired. The north and south lode, which is a strong one, intersecting all the others, is most favourable to lead deposits, and leaves no doubt but in the prosecution of these lodes a good mine will be opened up. The water being near the surface we have to bring up a drain from the north boundary, which will serve the threefold purpose of co-esteaming the ground, a drain for the present, and an adit for the future. This, and co-esteaming in other directions, is being pushed on as fast as possible.

JNO. NANCARROW.

March 31, 1864.—I have inspected the above property to-day, and now beg to hand you my report. I find it is situated south of the West Chiverton and Chiverton Moor Mines, and the lodes are parallel with the above mines. The boundary of the sett, as pointed out by the captain on the mine, is upwards of half a mile in length, and about the same in breadth. They have already opened on the back of three east and west lodes, but not sufficiently deep to form any correct idea of their real value and character, and for the present they cannot open them deeper, in consequence of the water, but as the summer comes on they will no doubt be able to sink deeper, and to properly ascertain their size, and how much they underlie. They have also a counter lode crossing the east and west lodes at an angle of 45°, on which they have sunk a shaft 6 fms., and the men are trying to sink it still deeper, but are entirely defeated by the water. This lode is also showing some good indications for the production of mineral. They have also a north and south lode running through about the centre of the sett, and where, no doubt, large bunches of lead will be found in the east and west lodes in conjunction with a north and south lode. To the south of the southernmost lode yet discovered there appears to be a large elvan course running nearly parallel with the east and west lodes, and from the fact of these lodes underlying south towards the elvan, will, in a moderate depth, form a junction with it; this also is a most favourable geological feature for the production of rich deposits of lead. They are now bringing up a lobby from the north boundary of the sett, which will, I think, unwater the lodes that are already discovered from 7 to 8 fms. deep, and will, at the same time, lay open any other east and west lodes which have not yet been seen. They will have, perhaps, about 100 fms. to bring this lobby to cut the north and south lode, when they will be able to drive south on its course and intersect the east and west lodes already discovered, at a depth, as I have stated, of 7 or 8 fathoms. I expect this lobby will have to be brought up to the lodes even before they will be able to determine the right position of the permanent engine-shaft; therefore, every means should be adopted for pushing it on as fast as possible. The stratum, as far as I could judge to-day from the separate pits sunk, is a light-coloured clay-slate, quite congenial for lead. This sett being directly parallel with West Chiverton and Chiverton Moor Mines, I see no reason why it should not be found equally productive; of course, time and money must be had for its proper development, although I do not expect a very large amount will be required.

HENRY JAMES.

April 2, 1864.—In accordance with your request, I have carefully inspected the above mining property to-day, and beg to hand you my report. The sett is extensive, being upwards of half a mile east and west on the line of the lodes, and about half a mile north and south, and joins the West Chiverton and Chiverton Moor setts to the south. There have been three east and west lodes laid open upon the backs by co-esteaming and shallow sinking, shafts varying from 8½ to 6 fms. deep. The lodes above referred to have not been sufficiently laid open to enable me to give their size and underlay. The stratum in which the lodes are embedded in is a light clay-slate, of the same description as its neighbours. There is also a north and south lode crossing the sett, besides a counter lode of great promise. There are two elvan courses running parallel with the lodes; the lodes and elvan courses are parallel to the West Chiverton and Chiverton Moor lodes. Taking the position of the Great South Chiverton sett into account, with its rich neighbour, there is every reason for you to look forward to good results at a shallow depth. There can be but little further trial made as to proving the size and underlay of the lodes before the adit is brought in, which is in full operation, and taken up from the north boundary of the sett. The adit to the south and east and west lodes, so far as opened upon, will leave a back of about 8 fms.; it will intersect two intermediate lodes, if not more, before intersecting the south lode before mentioned, and it can be driven upon a north and south lode for the greater part of the distance. The intersecting lodes and elvan courses may, therefore, be regarded with more than usual expectation. Taking the position of the sett in connection with its several lodes and elvans, there is more than an ordinary chance of early success, particularly at the junctions of the lodes and elvans, which is a pretty safe guide. The driving of the adit should be

forced on with the greatest possible speed; by doing so you will lay open the lodes, and enable you to decide where to sink your engine-shaft, &c. Of course, time and money are required in the development of new property as well as old, but I do not expect a large sum will be required here.

JOHN GOLDSWORTHY.

SWANSEA COPPER ORE WHARVES.

Swansea, January 1, 1864.

GENTLEMEN.—We beg to inform you that, in consequence of the retirement of Messrs. W. and J. M. Williams from the copper ore trade, which they have carried on here for so many years past, we have resolved to enter upon that business, and for which purpose we have secured most eligible wharves, on the west side of the North Fiott, where vessels drawing 20 ft. of water can get alongside at all times. These wharves are now being covered in, and, together with a steam crusher now erecting, will, we expect, be completed in two or three weeks from this date.

The business we purpose carrying on is that of copper ore wharfingers, combined with metal and other general agencies, which will be managed by our Mr. Thomas Elford, who for 20 years has filled an important situation under Messrs. Williams, Foster, and Co., and for the last eight years has had the entire management of their large copper smelting works, and copper and metal rolling mills, in this locality, as well as the copper or business of Messrs. W. and J. M. Williams, which we trust will be a sufficient guarantee to our friends that any business you entrust to our care will be conducted with the most scrupulous attention to secure the best results for their interests.

So soliciting a share of your consignments of ore, regales, and slab copper to this port, as well as a share of any general business you may have to transact in this quarter,

We remain, Gentlemen, your obedient servants,

ELFORD, WILLIAMS, AND CO.

REFERENCES.—Messrs. Williams, Foster, and Co., London and Liverpool; Messrs. Williams, Harvey, and Co., London and Liverpool; the Glamorganshire Banking Company, Swansea; Messrs. Alex. Bell and Sons, No. 8, Finch-lane, London.

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## Notices to Correspondents.

SIR.—Can any reader give me information as to how I can obtain a correct statement of the amount of coal and iron raised and produced at any particular works?—BACIN.

YUDANAMUTAWA.—In answer to the query of our correspondent, as to the reason why the ores of this company do not appear in the Swansea Ticketholders, we learn, on enquiry, that the respective parcels, on arrival, are sold under reserve, which is not permitted at public ticketholders, and by this arrangement a more uniform price is obtained. The whole of the ore already at Swansea, sold or awaiting sale, is about 550 tons, and averages 31½, 33½, and 34½ per cent.

## THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, APRIL 16, 1864.

When new mining regions are opened up, or old ones resuscitated, it becomes a matter of public importance to enquire into their merits; it is therefore that we again recur to the Wheal Vor tin mining district, which is giving fair promise at present of again taking the precedence of every other part of Cornwall in the production of tin, and the profits to be derived from this branch of mining. Cornwall has been from the earliest ages of historical record the source from which the principal part of the tin required by the world has been derived. The Phoenicians, the most commercial and enterprising nation of their day, visited the shores of Cornwall in quest of the much-valued metal more than 2000 years ago, and no doubt the streams and mines have been worked, to a greater or less extent, from that time to this; for as civilisation advanced the want of this desirable metal must have increased.

It strikes one as something wonderful that such a narrow strip of land as Cornwall, should not in such a long period have become completely exhausted of tin, but instead of this being the case the quantity has gone on increasing. Records of the annual quantity produced do not appear to have been kept before the year 1750, when it amounted to 2876 tons of block tin, or pure metal. In the last volume of "Mineral Statistics," issued by Mr. HUNTER, Keeper of Mining Records at the Museum of Economic Geology—viz., for that year 1862—we find the quantity produced in that year to be 14,127 tons of black tin or pure ore, yielding 8476 tons of block tin, or pure metal. These facts do not show any signs of exhaustion, but indicate that by exploring more extensively the yield may be increased to almost any extent, and this will, no doubt, be done, and the supply kept up suitable to the wants of successive generations.

The importance of the Wheal Vor district, relatively to the other parts of Cornwall, is shown by the fact that when explored by the one mine alone which gave it its celebrity, the Old Wheal Vor, this mine returned about 200 tons of black tin monthly, and it will, no doubt, appear strange, that whilst this enormous quantity of metal was being extracted from one solitary mining operation, an extensive field lay around almost completely unexplored, possessing precisely the same geological features, and the identical lodes, yet nothing further was done to develop it. Even at the present time there are only a few mines scattered at considerable intervals over this large tract, but in these the results being met with are such as quite to bear out the character of the district established by the Old Wheal Vor. The Great Wheal Vor Company are working on the Wheal Metal lode, which is some distance south of the old mine, and are there opening out the greatest and richest tin mine of the present day. Great Wheal Fortune, still further south, has already discovered and worked on a course of tin, which was of great value, and the prospects continue good for future discoveries. Sithney Carnmeal, also in the southern portion of the district, is beginning to give signs of great productiveness.

Sithney Wheal Metal, which is on the Wheal Metal lode, is now being vigorously worked, and is likely to rival its rich neighbour on being thoroughly developed. There remains, however, the extensive tracts reaching from the ground occupied by the old Wheal Vor eastward to the granite hills forming the natural boundary of this district in that direction—a distance of about one mile. This ground is occupied by East Wheal Vor, in which a vigorous course of operations has just been commenced, and is the perfect counterpart of Old Wheal Vor. The same deep bed of clay-slate in which such unequalled masses of tin have been found in the old mine; the same lodes, parallel and similar cross-courses, and the whole resting in the same great hollow of granite. This splendid mining field seems formed by Nature as a rich treasury of metal. The bold granite hills rise as boundaries on the east and west, forming a huge trough, which holds the killas rock, through which the numerous and rich lodes hold their course from one range of hills to the other, retaining their richness in metal throughout the killas, and deteriorating only on touching the granite. There are also identical elvan courses, cross-courses, and the other important geological features which form portions of the western half of this, and of all the other great mining fields of Cornwall.

It seems, therefore, almost

remains an incandescent body, throwing out an intense heat, nearly equal to that urged by a blast. This coke, when collected in a body, will last for twelve or more hours; and, if a shovelfull of coals is thrown at the entrance, or windward side of the draught, it lasts for three or four days, burning the smoke evolved, and evolving steam in a manner surprising to look at. It is applicable to the reduction of metals from their ores, and 1 ton will do the work of 3 or 4 tons of coal. It is also applicable to domestic purposes, and the destruction of offensive smells, and all smells of which hydrogen is the bearer. It is superexcellent as a filter for water, disinfectant for sewers, &c. It may be made up in cages, and hung in hospitals, when all infecting gases or miasma will rush to it and get destroyed instantly. Cholera, wherever found out of the human system, or malignant infectious diseases of what sort soever, lose their virulence. Mr. Wall writes—"It is one of my great agents for the destruction of carburetted hydrogen in coal mines, but not all that I use for that purpose; however, this is patented, and I purpose patenting all, and making it complete shortly. In a word, it is one of the greatest boons placed before mankind for many years."

#### METALLURGY OF IRON AND STEEL.

The long-promised second volume of Dr. Percy's "Metallurgy" has now been issued, and whatever disappointment may have been felt at the delay will be more than compensated by the minuteness and completeness of the information which the author has succeeded in bringing together, and the numerous results of personal practical researches which he has recorded. The enormous quantity of facts which have been collected has rendered impossible the completion of the work in two volumes, as originally proposed; but there are few who will regret the necessity of the extension, as "Percy's Metallurgy" will now be treatise without equal, either in this country or on the Continent. The volume now under consideration treats of iron and steel alone, and yet comprises a larger number of pages than that which preceded it; lead, silver, and gold are, therefore, reserved for the final volume. The plan of arrangement and general treatment of the subject adopted in the first division has been retained, so that the reader is enabled the more readily to appreciate the instruction afforded. The practical details of working, as well as the metallurgic chemistry of iron and steel, are elaborately treated of; and, as all the drawings are carefully laid down to scale, the value of the work to all connected with the manufacture of iron can scarcely be estimated.

The chemistry of iron, as Dr. Percy remarks, notwithstanding all that has been done of late, is yet very imperfect; and some even of the elementary branches of the subject are extremely obscure. The so-called compounds of iron and carbon, for example, are in this category. The chemistry of steel is involved in still greater obscurity. Problems of the highest chemical interest in connection with the metallurgy of iron and steel await solution. They demand for their successful investigation the exercise of the highest analytical skill, and involve considerations worthy even of study by those who delight in transcendental enquiries. As Reaumur well remarked—"The useful well considered has always something curious, and it is rare that the curious well followed up fails to lead to the useful." So much attention has in recent times been devoted to what is usually designated organic chemistry, that the field of inorganic chemistry has been comparatively deserted; and were Dr. Percy's suggestions as to the special points urgently requiring investigation the only useful portion of his work, the book would be well worthy of the study of those desirous of acquiring sound knowledge of the metals treated of, and of earning a lasting reputation for the utility of their researches in those channels where their labours are most required. Every particular, with the exception of positive trade secrets, connected with iron and steel, or the works in which they are manufactured, will be readily ascertained from the book; and as Dr. Percy has had the advantage of the assistance of many of the most celebrated practical iron manufacturers in all parts of the kingdom, the greatest possible confidence may be felt that the data are accurate. Thus he tells us that in the majority of instances the original drawings have been presented to him, and that in nearly every case the woodcuts have been examined by the managers of the works to which they refer; and the description of the processes have also been revised on the spot by the same experienced authorities—more scrupulous care to secure correctness could scarcely be exercised or desired.

The attempt to epitomise a volume of a thousand pages, in which the author has laboured to state as many facts as possible in the fewest possible words, would be fruitless; we will, therefore, content ourselves with observing that iron and steel are treated separately, the former occupying about three-fourths of the volume. The physical properties of iron are first considered, and then its chemical properties, the alloys of iron occupying the third chapter. In alluding to the ores of iron, the nature, as well as the advantages and disadvantages of the several kinds of ore commercially used—magnetic, franklinite, red and brown hematites, spathose, and argillaceous ores—are explained, and the several varieties of each are described. The next chapter is devoted to the subject of assaying iron ores, which is treated in a manner that cannot fail to make it of thorough practical utility to those consulting it. The various processes which have from time to time been used, or proposed, for the direct extraction of iron in the malleable state from the ore are then described, and the author next proceeds to explain the now more generally adopted process of extraction—the chemical phenomena of the modern blast-furnace, the description of the blast-furnace, the blowing-engines and blast-apparatus, the hot-blast, the gases of iron-smelting blast-furnaces, remarks upon the best form of blast-furnace, and miscellaneous details concerning the blast-furnace and its working, in turn receiving attention. The whole process, from the blowing of a furnace to the production of the finished pig, is so minutely described, that when the reader comes to apply the knowledge acquired to practical purposes it is impossible that it can fail him. The consideration of the analyses of the various kinds of pig-iron, of the charges and yields of blast-furnaces, of the form of blast-furnaces, and of the dimensions, charges, and yields of the blast-furnaces of Prussia having been disposed of, the question of the production of malleable iron from cast-iron is taken in hand, the introductory chapter comprising a brief description of the South Welsh, Swedish, Franche Comté, and various other English and continental processes; and this is followed by puddling, the working of the ball, the working of puddled bar into merchant or finished iron, sheet-iron, and slit rods, special qualities of iron, and miscellaneous observations. The portion of the book relating to iron concludes with lists of current prices and denominations of British merchant iron, and plans of ironworks. The manufacture of steel is treated under six heads—the production of steel by the addition of carbon to malleable iron, the production of steel by the partial decarburisation of cast-iron, the production of steel by fusion of iron with malleable iron, casting steel, manipulation of steel, and strength of iron and steel; a sketch of the history of iron, and a short appendix of a dozen pages bringing the information almost up to the day of publication concluding the volume.

Taking the work as a whole, it is without doubt the most elaborate and useful treatise upon the metallurgy of iron and steel that has yet been issued, and one from the perusal of which anyone connected with the manufacture of those metals will derive the greatest possible advantage; whilst the illustrations of the descriptions with some 250 diagrams, as well as numerous large-sized lithographic drawings, render it as near as may be perfect. It is a book that must long maintain a very enviable position as a Metallurgical Text-book, and the three volumes, judging from those which have already appeared, will leave little necessity for going to other sources for information relating to the metallurgy of any of the common metals.

"Metallurgy: the Art of Extracting Metals from their Ores, and Adapting them to Various Purposes of Manufacture." By JOHN PERCY, M.D., F.R.S., Lecturer on Metallurgy at the Royal School of Mines. Second volume. London: John Murray.

DR. PERCY ON THE BESSEMER PROCESS.—At the Royal Institution, on Friday, Dr. Percy delivered a lecture on Recent Improvements in the Smelting of Iron and the Manufacture of Steel, in which he particularly noticed the Bessemer process of converting cast-iron into steel. Dr. Percy, though admiring the process, expressed very strongly the opinion that it was an old invention, and the right to its exclusive use was not justified by equity, whatever it might be by law. The principle of the process consists in directing a blast of cold air on the molten iron as it issues from the furnace, the effect of which is to ignite the carbon contained in the metal, and during the process of intense combustion thus excited the carbon is consumed; and the pig-iron may be reduced to the state of steel or of malleable iron, according to the length of time the combustion is continued. Dr. Percy said that long before Mr. Bessemer had taken out his patents the same principle was constantly applied by nailers, who increased the heat of the hot metal they were working by exposing it to a blast of cold air. He further observes that there was a difficulty attending the original

Bessemer process, arising from the want of certainty in determining the length of time the combustion of the metal should be continued. That difficulty had been in a great measure overcome by Mr. Mushet, of the Forest of Dean, who continued the combustion until all the carbon was consumed, and added the required quantity by a subsequent operation. He obtained a patent for that improvement, but accidentally omitted to renew it at the end of the third year, and the improvement could now be adopted by Mr. Bessemer. There was another important difficulty which the Bessemer process has not yet overcome. Most of the iron ores in this country contain phosphoric acid, which is not removed by that process of making steel, though it is by the ordinary puddling-furnace; and the presence of phosphorus in iron, even in very small proportions, is highly detrimental to its quality. The process is not, therefore, applicable to such ores.

#### UTILISATION OF BLAST-FURNACE CINDERS.

In the Journal of Sept. 26 last we published a communication from Mr. A. L. Fleury, of Philadelphia, describing a process which he had discovered of profitably treating the refuse cinders of puddling and reheating furnaces. Mr. Fleury observed that unslaked burnt lime has the peculiar property to decompose silicates during the act of hydration, or slaking, as it is commonly called. This can easily be demonstrated by pouring water slowly into an intimate mixture of sand and fresh-burnt lime—the outside of the sand grains will yield to the lime gelatinous silica, and when dried form with it a strong chemical combination, silicate of lime—the base of a good mortar. Taking advantage of this chemical fact, he mixed a proper percentage of powdered burnt lime with the fine-ground cinder, and, after wetting the whole with water, exposed the mixture to the drying influence of the atmosphere. The dry compound was then heated in a common puddling-furnace, and treated like pig-iron. He then obtained 50 per cent. of wrought-iron, which, however, retained still some traces of sulphur, leaving the iron somewhat red-short. To extract these last traces of sulphur, he dissolved in the water which he used for sinking the lime a small percentage of a chlorine salt, and his expectations were thoroughly realised. The process is also applicable to the working of siliceous ores, and can be performed in the puddling, cupola, or blast furnace; it can also be worked to advantage in Bessemer's, Nystrom's, Swett's, and other similar furnaces. The preparation of the cinder, cost of lime, salt, &c., does not exceed \$2 per ton, and the result is, if properly worked, invariably a good quality of iron.

Referring to this statement, Professor Crace-Calvert, of Manchester, wrote that Mr. Fleury's process was not new. He stated that in 1854 he devoted much time to ascertaining the best methods of employing cinders from puddling and refining furnaces, so as to enable ironmasters to use them in larger proportions in their blast-furnaces without injury to the quality of the iron produced; and in August of the same year he took out a patent to carry out his views, which was identical with that of Mr. Fleury. In his specification he stated—"The slag, or cinder, either before or after being calcined, or roasted, is ground into coarse powder, and mixed with half its weight of slaked lime, and made into a thick paste, which is formed into lumps, or bricks, with or without coal-dust or charcoal, and is introduced, dried or calcined or not, into the blast-furnace, and worked in the usual way." Prof. Crace-Calvert soon found that this process was not practicable, owing to the enormous expense of grinding the cinders, and afterwards mixing them with slaked lime, and making the whole into bricks, and, lastly, because the constant vibration which exists in blast-furnaces, owing to the working of the blast-engine, caused the bricks to fall into powder, and to interfere with the draught, and, consequently, to impede the working of the furnace. Therefore, he continues, in Sept. 1855—"I took out a second patent for fusing the cinders with about 20 per cent. of quick lime, 30 per cent. of slaked lime, or 50 per cent. of carbonate of lime, previously to using the cinders on the blast-furnace. This process I carried out with perfect success on the Continent and in South Wales. By this process the silica, sulphur, or phosphorus contained in the slag are retained by the lime, and pass away in the cinder of the blast-furnace, whilst the oxide of iron thus liberated is reduced with great facility to a metallic state. I am aware that cinder, or slag, and lime had been used in the blast-furnace for a long period; but my improvement consists in combining cinders and lime in proper proportions previously to placing them in the blast-furnace, thus securing a perfect combination of the cinder with its flux, so that when it comes in contact with the reducing agents in the blast-furnace the oxide of iron is at once liberated from the impurities with which it is united." As to the use of chloride of sodium, Prof. Crace-Calvert refers Mr. Fleury to his patent of 1851 for the use of chloride of sodium as a means of removing sulphur either from iron ores or from cokes. The value of this process was fully tested on a practical scale at several ironworks, and also in a series of experiments conducted at various engineering establishments, with excellent results.

Now, although Mr. Fleury has as yet done nothing towards the development of his invention in this country, it seems that the process has worked well in the United States, and that, consequently, Mr. Fleury could not permit even the smallest doubt to exist as to the originality of his invention. In reply to what Mr. Fleury regards as unduly severe strictures upon his communication, he observes that it is not to be wondered at that cinders mixed with slaked lime crumble in the blast-furnace, and interfere with the draught; but it is somewhat to be wondered at that a professor of metallurgical chemistry should mistake the process of Mr. Fleury for a process so defined, as well in the specification of the patent as in its practical workings, and so mistake it as to declare it "identical." The truth is, that not a particle of slaked lime is used in the process of Mr. Fleury. Mr. Fleury has long been conscious that slaked lime has no property of cohesion with the mixed compound of the cinder, notwithstanding it may have, as a flux, with a molten mass. Prof. Crace-Calvert might well apply, in 1855, for a new patent, which he says he did, per consequence of the failure of his 1854 patent to answer the expectation of the inventor; and, although his new patent is a nearer approach to the patent of Mr. Fleury, yet it is vastly different in several very essential and important particulars. But, before stating the particulars, Mr. Fleury desires to observe that, if the process with slaked lime was found not to answer, and the process with 20 per cent. of quick lime, 30 per cent. of slaked lime, or 50 per cent. of carbonate of lime, was "carried out with perfect success on the Continent and in South Wales," the difference must be attributable, in the first division of that process, to the action of quick lime, and in the latter division of that process to the action of carbonate of lime on the components of the slag. The chemical action of 20 per cent. of quick lime and 30 per cent. of slaked lime on the silica contained in the slag, in a state of fusion, is certainly very different to the chemical action of 50 per cent. of slaked lime, mixed with ground sand and water, sufficient to make them into a paste. And the chemical action of 50 per cent. of the carbonate of lime mixed with slag, in a state of fusion, is also very different to 50 per cent. of slaked lime with ground sand and water sufficient to make them into a paste. And yet another and altogether different chemical action on the silica contained in the slag takes place when the slag is ground and mixed with caustic lime, together with sufficient water (in which has been dissolved some chlorine salt) to form the slag and lime into a paste. The hydration, or slaking, of the lime in close contact with the silica contained in the cinder gives rise to two distinct results. First, the heat produced during hydration and the alkaline reaction of the lime induces a partial gelatinisation of the silica, and forms a strong cementing substance—a silicate of lime. Secondly, by the abstraction of the silica from the cinder an action on the protoxide and the peroxide contained in the mass is induced, which brings the former to the state of the latter, and the chlorine salt, being intimately mixed with the whole mass, takes hold of the sulphur which clings to the iron, and prepares it for elimination in the furnace. Bricks or blocks made of this compound will not fall into powder, and interfere with the "draught" of the blast-engine, nor will they "impede the working of the furnace"—this latter is Mr. Fleury's process, which, it will be perceived, is not identical with any of the processes patented by Prof. Crace-Calvert. As to the chloride of sodium, Mr. Fleury remarks that this material has been used for the purification of molten iron, from antiquity, or works of scientific data have led him greatly astray.

There can be no doubt that the utilisation of blast-furnace slags is a subject of such vast importance to the iron trade, not only in this, but in every other country, that there would be ample room for two inventors, fortunate enough to discover the means of successfully operating upon them, to realise fortunes; yet we certainly cannot say any similarity whatever in the inventions of Prof. Crace-Calvert and Mr. Fleury, even assuming the composition of the two gentlemen's balls to be identical, since, by the invention of Mr. Fleury, at least one process is entirely saved, for he proposes to treat the balls at once in the puddling-furnace, whilst, according to Prof. Crace-Calvert's process, they would be introduced, dried or calcined or not, into the blast-furnace, so that whilst the one would obtain pig-iron only, the other would obtain it properly puddled; so that, assuming the cost of crushing the cinder and mixing it with the flux to be the chief obstacle to be surmounted, it would follow, theoretically at least, that the process which produces wrought-iron must be preferable to that which yields only pig-iron of only one-half the value of wrought-iron, and the only question to be decided was whether the cost of preparing the balls is not too high to admit of the application of the process at all, which Prof. Crace-Calvert negatives by his reference to his second invention.

GLASS SHEATHING FOR IRON SHIPS.—Her Majesty's iron ship, *Buffalo*, having returned to Deptford Dockyard after a three months' trip, has been inspected by divers for the examination of Leetch's preservative glass sheathing, applied to a portion of her bottom. The result was highly satisfactory, and appeared fully to realise the anticipation of the inventor, as the surface of the sheathing was then as free from any incumbrance as when first laid on.—*Times.* [We are informed that the attention of the Government was drawn to the desirability of using glass as a preservative for iron ships in 1853 or 1854, and that letters to that effect are in the hands of the Admiralty.]

DISCHARGING COKE OVENS AND LOADING COKE WAGONS.—To diminish the cost of these operations, and facilitate them by the partial substitution of steam power for hand labour, an invention has been patented by Mr. Alfred Jobson, of Darlington. The coke is drawn from the oven by a rake, and received upon a screen, which is then raised, and the contents sifted off into the wagon in which it is to be carried. The coke is thus drawn and packed in the rail-way-truck or elsewhere, as the case may be, with the least possible amount of breakage, its value at the place of delivery being thus considerably increased.

NEW SAFETY-CAGE.—Some two years since we described the very ingenious safety-cage invented by Mr. Joseph Kaye Hampshire, the engineer of the Whittington Collieries, near Chesterfield, and which is also applicable to every purpose for which hoists are used; we now learn that it continues to work as satisfactorily as ever. The simple principle of the lever upon which this apparatus depends is not only different, but far more effective than any previously introduced for this purpose; it acts instantaneously, and of itself directly, and is independent of any other machinery, which might accidentally be out of order the very moment its services are required. The apparatus provides against all possible accidents that can arise from the breaking of the rope or the over-winding of them, so that in every case whenever the rope is detached or separated from the cage four levers are brought into immediate action by the weight of the cage, aided by two strong springs, and instantly grip the conductors in four several pieces, securely retaining the cage in the exact position in which it was left by the broken or disconnected rope. The levers work in a box, and are kept in gauge by a rod, and while the cage is in ordinary work are confined by four stops riveted on lever-plates. The spring, which is a powerful six-plated spring, not only acts upon the levers, but also takes off the sudden check or strain from the rope when taking hold of the weight from the shaft bottom, and renders unnecessary the expensive box-spring generally used for this purpose. The disconnecting catch consists simply of two strong pieces of iron carefully joined together on the principle of the pliers, it is fastened to the iron rods by which the cage is suspended, and when by over-winding brought into contact with the pulley frame immediately opens. The rope is instantly detached, and passes harmlessly over the

spur-wheel, while the cage is kept secure in its place by the grip of the levers, as in the former case. The iron-rods are considered to be a striking and important improvement on the usual heavy winding chains, and the catch, which is necessarily of considerable weight, being fastened to rods, prevents those accidents which can hardly fail to ensue when the catch and the rope together pass rapidly over the pulley-wheel. The apparatus is so constructed that it is always in working order, and seen to be so by the banksman at every draw that is made, and not kept in the same position for months, while the wet and heat of the shafts are liable to corrode and fasten the parts, and, perhaps, render them unfit for action on the very occasion when they may be required.

NEW GAS APPARATUS.—The specification of the patent of Messrs. Malam and Tice, recently filed by Mr. Henry, patent agent, Fleet-street, comprises arrangements for supplying railway carriages with compressed gas; an improved retort, or hydraulic main, adapted for use on shipboard, and some improvements in gasholders. The first of these also includes two spring regulators. The distinctive feature of the retort is the employment therein of a passage forming the sole communication between its interior and the ascension pipe, so that all the gas is caused to traverse the hottest part of the retort before escaping. The hydraulic main is constructed with recesses on its lower side to receive the ends of the dip-pipes, and retain the gas or impurities. A gasholder is described, with a contrivance for steady the cylinder in its descent, consisting of adjustable teeth working into racks on the pillars. Another gasholder is specified, in which an expandable vessel is fitted in a close chamber, furnished with an escape-pipe.

#### REPORT ON CORNWALL AND DEVONSHIRE.

[FROM OUR TRURO CORRESPONDENT.]

APRIL 14.—In a direct line the distance from East Wheal Rose to West Chiverton is between three and four miles, in a direction as nearly as possible due south-west. As the bearing of the Chiverton main lode is about 17° or 18° north of east magnetic (about 39° north of true east), it would pass, if it continued and kept that course, through the southern portion of Newlyn Downs, a little more than half a mile south of old Wheal Rose and East Rose Mines; so that the old east and west lodes worked in Shepherds and Wheal Rose are parallel to the Chiverton lodes—the Wheal Rose lodes being about half a mile further north, and the Shepherds lodes about a mile further north.

The facts connected with the commencement of the present working of West Chiverton by the late Mr. Cookney, and its subsequent sale to the present proprietors, are so well known, and have been so frequently stated and commented upon in your columns, as to render it unnecessary for me to dwell upon them here, so that I shall merely confine myself to a description of the workings of the mine as they now stand. The main lode in this mine (Williams's lode), the bearing of which, as I have already stated, ranges from 15° to 20° north of east, underlies south about 2 feet per fathom. During its whole course it is a large lode—indeed unusually large for a Cornish lead lode—and where productive generally makes lead throughout, so that the greater proportion of the work raised here is much mixed with gangue matter, and requires some power in dressing machinery and appliances to return it. This lode has been opened on by two shafts, 40 fathoms apart:—Hawkes's engine-shaft, which is sunk vertical from the surface to the 80 below adit (the adit is only 7 fms. deep at this shaft), crossing the lode at the 70; and Susanna's shaft, which is sunk to the 70, almost the whole way on the lode. Hawkes's shaft is 40 fms. west of Susanna's; and 65 fms. further west, Burgess's shaft is now down to the 40, below which it will be continued sinking to meet the levels coming west from Hawkes's. From the 40 there are levels at every 10 fms. Above the 40 the lode did not make much lead; below this, the level extended furthest east is the 50, which is driven about 55 fms. east of Susanna's; and the level extended furthest west is the 70, which is driven 50 fathoms west of Hawkes's. So that below the 40, at which level the ore came in, the extent of the workings at West Chiverton are not at present considerable, being less than 150 fms. in length at the most extreme points. Upwards, the 40 is driven nearly 160 fms. west of Hawkes's, and eastward the 20 is driven for some scores of fathoms.

Shallow, Williams's lode was characterised by a large sparry back. A little lead was discovered in the 8 fm. level, a short distance east of Susanna's; in the 40 there was a run of lead ground about this shaft for 30 fms. in length, and in the 50 this ore ground lengthened to 60 fms. Below the 50 the underlie of Williams's lode became more downright, and another lode went off south, which has been called Valpy's lode. Whether this latter is to be considered a distinct lode, or whether it is merely a south part of the main lode, is not very clear, for it makes a junction with the latter both east and west, forming, in fact, a large "horse" of ground between the two. In the 60 the junctions of the main lode with Valpy's are about 15 fathoms east of Susanna's shaft, and a fathom or so east of Hawkes's, showing the horse to have a length of about 52 fathoms at this level, with a maximum width of about 12 feet. In the 70 fathom level the lodes are rather further apart, the maximum width of the horse here being nearly 5 fms., and with this increase of width there is also increase of length, the points of junction at this level being at the bottom of Susanna's shaft and 15 fms. west of Hawkes's, showing a length of 55 fms. In the 80, as Valpy's lode has only been opened on about 25 fms., we do not yet know what its length may run, but as the lodes are closer together here, and Valpy's seems to be again falling back to Williams's, the probability is that the horse will be rather shorter in this level. As I have said, the eastern junction of the two lodes in the 60 is 15 fms. east of Susanna's, and in the 70 at the bottom of Susanna's shaft, so that in a depth of 10 fms. the junction has dipped 15 fms. west, and the western junction dips with a similar angle. As Valpy's lode has no existence beyond the 50 fms. comprised between these two junctions, of course the ore ground that makes upon it is dipping rapidly west with them; but below the 50 the ore ground on Williams's lode seems also to dip equally rapidly west, making the most lead, as it were, opposite the lead ground on Valpy's lode, on the other side of the horse.

condition of prosperity is due, in a very great measure, to his mining ability. As I have been acquainted with the mine, and seen it at intervals, for the last four years, I am, probably, in a better position to give an opinion on this subject than any person not absolutely connected with the management.

#### REPORT FROM NORTHUMBERLAND AND DURHAM.

APRIL 14.—The Coal and Iron Trades continue good, on the whole, with excellent prospects for the summer, the demand both for coal and iron being well maintained. The prices received for both coal and iron also are much better than during the last year, so that, allowing for the advance which has taken place in the price of most descriptions of labour, there is a little more encouragement in the prospect for iron and coal producers. The introduction of Hartley coal into the steam vessels of the British Navy cannot fail to improve the demand for this valuable steam coal; its real merits will, indeed, only now have a fair chance of being recognised, and a greatly increased demand may be expected for this kind of coal, as a most rapid increase in the number of steam vessels is taking place, and it is confidently believed that if this increase continues the demand for steam coal must very soon equal the supply. With the single exception of the strike at Seghill Colliery, the men are now on good terms with their employers at most of the collieries in the district, and the prospect for employment is certainly good, while the rate of wages is better now than at any former period. At Seghill, however, we regret to say, there appears to be no prospect of a termination of the strike. The effect on the inhabitants of the village and neighbourhood is, of course, most disastrous.

Mr. Dunn, the Government Inspector, attended at the Gateshead Police Court, on Friday, to prefer a charge against the owners of Sheriff Hill Colliery, with respect to the number of shafts at their colliery, and the arrangements in those shafts for lowering and raising the men employed. It appears there are two shafts at the colliery, but one of them cannot be used for lowering or raising men, there being no machinery erected for that purpose; the Inspector had urged upon the owners the necessity of erecting this machinery, but without effect. Mr. Charlton, one of the owners, said he had some doubt as to whether it was necessary to have two shafts. The principal reason why they had not attended to the request of the Inspector was that they had no control over the second shaft; they expected, however, shortly to get leave to erect machinery in it, and when they did so they would put it in order. They were quite willing to refer the matter to arbitration, and ultimately this course was agreed to by both parties, so that the matter in dispute will be settled in that way.

An accident of a serious nature, though happily unattended with loss of life, occurred on Friday night last at the Margaret Pit, Newbottle Colliery, belonging to the Earl of Durham. For some months a number of men have been employed in driving a drift in the direction of some old workings; and, as it was well known that these workings would be filled with water or pent up gas, the utmost caution was necessary to ensure the safety of the workmen. The work progressed steadily, and about three months ago a bore-hole 19 yards in length made a communication with the old workings beyond; and, on the pressure being tried, it was found to be no less than 70 lbs. per square inch. The water and gas in immense quantity was gradually allowed to escape, until the pressure last week was reduced to 2 lbs. per inch. So satisfactory and regular had the diminution in pressure been that another large hole was put through, and men were also set on to reduce the thickness of coal with a view to opening out the place. Two men were at this work on Friday night, and were working about 9 yards further in than the commencement of the borehole, having 10 yards of coal in advance, when one of them struck his pick into another bore which had not been bored, but had, nevertheless, been plugged up; a little gas had accumulated in the hole, and came off at some degree of pressure. The men suddenly became so alarmed that they ran away, leaving their Davy lamps behind them; and it seems likely that one of the lamps was damaged in their hasty retreat, for they had not got more than 30 or 40 yards away when a slight explosion took place. The explosion did not hurt them, but the fire communicated with the two bore-holes already mentioned, and immediately set fire to the coal. The fire spread with alarming rapidity, and defied all efforts used to extinguish it; it was, therefore, determined to shut up and drown the district where the fire existed, and it is hoped the fire may be put out without having resort to more extreme measures. The Newbottle Pits are all connected with each other, and the occurrence of this accident has caused the working of the pits to be temporarily suspended, owing to the interruption in the ventilation; but steps are being taken to get them to work again as early as possible, the men in the meantime being provided with work at some of the other pits belonging to Lord Durham.

Messrs. Murray and Co., of the Chester-le-Street Engine-works, have just completed a horizontal portable engine for Mr. Coulson, to be used for sinking and pumping purposes at a colliery in Bohemia. The same firm has also just completed a 100-horse-power engine for the Hibernia Coal Company, at Dusseldorf, in Rhenish Prussia.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

APRIL 14.—The Quarterly Meetings in connection with the Iron Trade of South Staffordshire have been held this week—yesterday at Wolverhampton and to-day at Birmingham. There has been a good attendance on each occasion, but the actual business done has not been large, for the orders given out have not been for large quantities. It is clear that buyers distrust the permanence of present prices, and hence are holding back in the hope of a reduction. The leading makers are, in a good many instances, well supplied with orders, but many of the smaller manufacturers are running short. Still, orders come in day by day, and the cases of works not in pretty full operation are few. There was, on the whole, to-day a disposition to feel confidence in the future, as everyone believes that the consumption of iron this year will be very large. Some, however, regret the last advance of 1*l.*, which sent up wages to their present high pitch; and, in point of fact, labour is scarce, and the prospect of a struggle with the men is not encouraging. It is worthy of note that the Miners' Association, at Willenhall, have ordered a levy of 1*s.* each member, to form an emigration fund, and a week's subscription realised 29*l.* 10*s.* Pig-Iron is not yet selling extensively, as large quantities remain for delivery. Best hot-blast, all mine pigs, are at 3*l.* 7*s.* 6*d.*, exceptional makes fetching 3*l.* 10*s.* Inferior pigs are rather lower. Coal is easier in price, and for the first time for months it has been stated that a few miners are walking about in search of employment. The Hardware Trades are, on the whole, rather more active, the foreign trade showing an improving tendency.

A machine for facilitating the process of puddling has been in use for some three weeks by Messrs. Beard and Son, of the Regent Ironworks, near Bilstion, and apparently with great success. Without a diagram a minute description would convey little idea of the nature of the invention, but it consists essentially of a vertical rotating shaft at the front of a puddling-furnace, which supports a movable horizontal plate, to which is attached a rib, which receives a variety of motions, which it imparts to the puddling rubble. The machine works only during the time the iron is in the boiling state, and the rolling up is done at present, by hand. It is said that the puddling is more effectually done by this method, that a larger charge can be worked at once, and that the iron, by reason of the completeness with which every part of it is exposed to the action of the air whilst in a melted state, is more homogeneous than that puddled entirely by hand. It is also stated that a charge is sooner finished, and that, in consequence, less fuel is used. The invention differs from the previous attempts to effect the same result from the fact that it merely takes the place of the puddler's hand, whilst other inventions, as Mr. Walker's and Mr. Tooth's aim, at effecting the exposure of every part of the iron to the air by the rotation of the furnace, and the presence of projections or irregularities on its spherical internal surface. The inventor of the machine is Mr. John Griffiths, now manager to Mr. John Eastward and Sons, of the Railway Works, Derby, but formerly manager for Messrs. Beard, at the Regent Works, Bilstion. The patent was dated June 26, and it was sealed Dec. 12, 1863. It is termed "an improvement in machinery for puddling iron and steel," and the number of the patent is 1612. Mr. Griffiths is a true friend to the class to which he belongs, and has given expression to that which all who know him will believe to be his real feeling in saying, that "if he thought his machine would injure the working man he would smash it up." Its application to a furnace will displace neither the forehand nor his underhand, for the apparatus is brought into play when the charge is melted, and it ceases to operate just when the iron has ceased to boil, and is drooping. At this point the forehand at once commences to ball-up. The apparatus can be worked by a small steam-engine, or by gearing from one used at the works, and the cost for such furnace is, it is said, about 15*l.*

A proposal brought forward by the most liberal and respected inhabitants of Hanley, in the Staffordshire Potteries, to adopt the Public Libraries and Museums Act in the town, with a view to the better support of the Hanley School of Art, and a Free News Room, has been defeated by an overwhelming majority, at a meeting where the education and argument were on one side, and numbers and loud unreasoning clamour on the other.

The discussion on the proposal to introduce the Factory Act with the half-time system in the Potteries appears to have led to an almost unanimous conviction that the system of employing children for half a day only, or on alternate days, with the obligation of attending school in the interval, is inapplicable to the district. A deputation of great local influence waited on Sir George Grey, on Monday, to represent the objections entertained, but the Right Hon. C. B. Adderley, Member for North Staffordshire, who accompanied them, is in favour of the half-time system.

At the Dudley Scientific, Art, and Industrial Exhibition, amongst the articles shown, a collection of carvings in South Staffordshire coal, and worked in various designs by a comparatively poor man, named Turner, of Dudley, excited much interest. A fine collection of delicate bronzes, belonging to Mr. Frederick Smith, is a prominent feature, and this case also contains three fine bronzes from Mr. W. Beddoe. A very important feature in the exhibition was the series of specimens of iron, produced under the patent of Messrs. Jacob and Preisshammer, by Mr. Joseph Beasley, of Smethwick. The feature of interest respecting this iron is that specimens equal to the best charcoal iron are manufactured from the common pig-iron. He exhibits also specimens of artificially made magnetic oxides of iron, prepared by forcing steam over hot iron filings, turnings, and borings. Messrs. S. and E. Ransome's exhibition of Weston's patent differential pulley blocks, and the patent hand-truck; Messrs. May and Co.'s exhibition of Giffard's patent self-acting water injectors, for feeding steam-boilers; and Tangye Brothers' hydraulic punch-

ing machines, are among the most interesting of the manufacture department. Models of Gore's gas-furnaces, for melting metals, specimens of Bessemer's steel, contributed by Messrs. Lloyd and Foster, of Wednesbury; a movable chemical diagram, by Mr. J. C. Woodward, Birmingham; and a great number of other objects, some of major and others of minor importance, go to complete this department of the exhibition. The Geological Museum is, in its way, very complete, for what specimens one collection is deficient in are supplied by others. The fine collection of the Old Dudley Geological Society is displayed to great advantage. There is another feature in the exhibition worthy of special notice, and that is the production of artificial light from the combustion of magnesium. This was shown by Mr. Capewell, who produced a fine specimen of photography taken with the aid of this light. The mining and surveyors' instruments of Mr. Davis (Derby) include theodolites, levels, and aneroidometers. One specimen of the latter shows how very important these instruments are in mining, and how with them the exact ventilation of the mines can be correctly ascertained, and thus a degree of safety obtained in the working, which must be of the greatest value. Mr. Nicholls, of the Coalbrookdale Company, exhibits some very delicate specimens of castings electrotyped, which show to what perfection the art of casting can be carried.

The Scientific Meeting in connection with this exhibition, on Tuesday evening, was presided over by the Right Hon. Lord Lyttelton. There was a numerous attendance of ladies and gentlemen: among those present were the Revds. G. H. L. Noot, J. H. Thompson, J. McGahern, M. Gibson, G. Lewis, W. Long (Vice-president of Sedgley College); Mr. S. Rudge (Mayor of Dudley), Prof. Beckett (Wolverhampton), Messrs. S. D. Ferday, J. Jones, T. Tinsley, M. Carrig, E. Hollier, S. Willets, — Higgs, B. Eberard, T. Collett, J. Finch, T. Brettell, T. Yates, S. Bowkley, J. Huntress, J. Stokes, S. Solly, G. Jones, W. Bourne, J. Hollier, — Fellowes, H. B. Ketley, W. R. Westwood, J. Ashton (Walsall), — Holden (Walsall), W. Smith, C. Cockrane, S. Bastick, and many others. The Rev. W. Symonds, F.G.S., President of the Malvern Naturalists' Field Club, read a paper on "The Progress of Geological Science during the past year." During his address, he pointed out how geological research had removed many fallacies, and especially had this been the case in consequence of the discoveries of the past year. The discoveries made of fossil fish in the old red sandstone was an instance of this. He afterwards alluded to the publication of Sir Charles Lyell's work on "The Antiquity of Man," and before concluding his remarks enforced as uncontroversial the great principle of progress which was everywhere manifested, both in physics and metaphysics, and which was especially made apparent to those who studied the science of geology. The Rev. gentleman resumed his seat amidst general cheering. — Mr. Charles Moore, F.G.S., Bath, then delivered a lecture on "The Ancient History of the Earth." This was illustrated by 100,000 specimens and diagrams. During his observations, he said, with regard to the 100,000 specimens mentioned on the programme, they could not see many of them present, but he might tell them that organic remains were in many instances so minute, that 1,000,000 would lie upon a space not exceeding a square inch. (Laughter.) The lecturer produced the cases which contained his specimens, and, amidst much laughter, showed how a very small box contained 60,000.

CONFERENCE ON PRACTICAL MINING.—On Wednesday evening a conference was held in the lecture-room, for the purpose of hearing a paper read by Mr. Rupert Kettle, "On the Working of the South Staffordshire Mines," and for discussing the best means of working such mines. There was a very large attendance, the room being crowded to excess, and the whole of the mine agents of the district, with one or two exceptions, were present. The chair was occupied by Mr. William Mathews. To mine agents, proprietors of collieries, and others whose interests are materially connected with the trade, the meeting was of great importance, and it is said that it was the largest assembly of mine agents yet known in the district. The Chairman, in opening the proceedings, after alluding to the importance of the subject which would be brought before them, expressed a hope that any discussion which might take place would be conducted in a fair and business-like manner, without regard to any feeling which might arise from conflicting interests. He then called upon Mr. Rupert Kettle to read the paper he had prepared upon practical mining. — Mr. Kettle, who was cordially received, remarked that he had been requested to read a paper to the conference, probably in consequence of some remarks he had made at a recent meeting in Wolverhampton. He then went on to quote authorities respecting the actual quantity or specific gravity per acre of the thick or 10-yard coal in South Staffordshire, and to compare the estimated specific gravity with the quantity realised. In the course of his observations, he alluded to the custom of "long weight" and "short weight," as affecting to a certain extent the calculations which were made upon the basis of legal weight, and sought to point out that, after making all due allowances for slack, coal used in firing for boilers and pumping-engines, allowances to men, and waste, the return of coal actually realised was not so much as ought to be if the data upon which the estimates were made were correct. After quoting statistics and authorities at great length, and alluding to the estimates made by Jukes from inspection and experiment in the Round Oak coal pits, two miles north of Dudley, and the Tividale coal, one mile west of Dudley, Mr. Kettle went on to speak of the different modes of working the thick coal mines, the quantity of coal procured from the first, second, and third workings, pillar and stall working, and the long wall working. During his address, which lasted upwards of an hour and a half, he expressed himself of opinion that the "long wall" mode of working was by far the safest. He also urged the necessity of having perfect ventilation in the mines, and the most complete control over the roof, and made some remarks upon the cause of fire in pits, alluding especially to the friction which might be caused amongst accumulations of coal dust by a "creak." This friction, he submitted for enquiry, might in some way, connected with the chemical action which would probably be going on in the accumulation referred to, produce a spontaneous combustion, which was known as "fire small" in pits.

At the conclusion of Mr. Kettle's paper the Chairman briefly summed up the heads which the learned gentleman had dilated upon—the discrepancy between the actual produce and the estimated quantity existing, which was a most difficult problem to solve; the advantages of the "rib and pillar," as compared with the "long wall" working; and the speculation relative to spontaneous combustion. — The Chairman having invited discussion, Mr. Henry Johnson rose and said that, after the very lengthy and elaborate paper the meeting had just heard read, containing as it did so many important topics for discussion, he thought that at that late hour it would be well to adjourn the meeting. They could not expect that evening to have so full a discussion as the subject deserved, and therefore he asked the Chairman to take the sense of the meeting upon the question of an adjournment. — The Chairman agreed that the subject was one of too great importance to dispose of that evening, but he thought they might go on for another hour. — Mr. Johnson (upon the suggestion of the Chairman) resumed. He considered that the best course to adopt would be to have Mr. Kettle's paper printed, and circulated among the members, and then they might come to a future meeting prepared for a more full discussion on the subject. Mr. Johnson then went on to combat the positions taken by Mr. Kettle, especially with respect to the data of his calculations, and to his allegations respecting the discrepancy between the estimated specific gravity of the coal existing and the quantity realised. He quoted numerous statistics based upon an authoritative estimate, and then remarked upon the various weights at which the coal was sold, and which materially affected the deductions drawn between the estimated specific gravity of the seam and the quantities returned as realised. There was the "short weight," which meant 20 cwt., to the ton, or 2240 lbs.; there was the "long weight," which was 20 cwt., of 120 lbs., or 2400 lbs., to the ton; "long weight long ton," which was 22 cwt., of 120 lbs. each, or 2640 lbs., to the ton; and there was another weight by which coal in the district was sold—a weight no man could make out satisfactorily, but he would call it "a double long ton," which could not be got at by gauging, and this, at a very moderate calculation, would be 2 tons to a boat-load of 22 tons. This would make the weight as sold 640 lbs. to the ton over and above the legal avoidpoundage of 2240 lbs., or 5 cwt., and 80 lbs. per ton above an avoidpound. — After taking all these matters into consideration, and making allowances according to these calculations, he went on to quote further figures to show that in the two workings of a mine—the middle, working, and then the rib and pillar working—the amount of coal proposed and sold was, according to book returns, 90 per cent. of the estimated specific gravity; and this was after deducting all the coal used for working the mines, bank and hovel fires, allowance of coal to clerks, lessens, lessors, and colliers.

After Mr. Johnson's observations, Mr. Job Taylor, who was called upon to speak, suggested that it would be well to have an adjournment, in order that each practical man present might come prepared to state the results of his experience upon the subjects which had been touched upon. In the course of some further discussion which ensued, it was stated that the average number of deaths in coal mines from accidents was, for the whole of the mines in the kingdom, ten for every two millions of coal; while for South Staffordshire the average was 27 for every two millions of coal. It was urged by Mr. Kettle that this was owing to the greater safety of the long wall working over the pillar and stall system. — Mr. Cochran did not think it fair to make a comparison between South Staffordshire and other districts, as the difficulties in working were so much greater in the former. — The Chairman remarked that if he could get some 30, 40, or 50 acres of good thick coal running evenly without a fault, he could have some very nice workings. ("Hear," and laughter.) It might be well for gentlemen to indulge in theories respecting coal workings; but, after all, it was only those who knew how much such workings were affected by faults, dips, croppings out, &c. — The motion for having Mr. Kettle's paper printed having been duly proposed and seconded, was put and carried. — A vote of thanks was afterwards proposed to Mr. Kettle for his valuable paper, and this was duly carried.

Mr. Johnson then called attention to the following paragraph, contained in Dr. Percy's work:—"It is no libel on South Staffordshire to assert that this magnificent bed of coal has been most barbarously treated. The pits have generally been worked by contractors, called butties, under the superintendence of viewers, called ground bailiffs. In consequence of the capacity and rascality of many of the latter, and the ignorance, inattention, and fraudulent connivance of many of the former, an enormous amount of coal has been irredeemably lost to the nation. Even at the present day the South Staffordshire colliery viewers are frequently very imperfectly educated for their responsible duties, and the system of colliery mismanagement, which still prevails in this part of the country, is a disgrace to the age." He considered that this was a libel upon the mine agents of the district, and that it was not deserved. Whatever might have been the experience of Dr. Percy, he (the speaker) did not think he was justified in making such a sweeping condemnation of a large class of men who were employed in this district. He, therefore, moved that a resolution be passed requesting Dr. Percy to withdraw the paragraph referred to from the next edition of his work, or to modify it. — The Chairman seconded the motion, remarking that it was not always well for authors to write merely upon their own personal experience. Any gentleman who had, unfortunately, taken a mine which turned out badly, might feel disposed to express himself very strongly upon the manner of the working of such mine. As a personal friend of Dr. Percy's, he would convey the resolution to him. — After some further discussion, the motion of adjournment was agreed to, it being understood that the adjourned meeting will be held in the course of about a month, or as much earlier as possible, pending, of course, the publication of Mr. Kettle's paper. — *Birmingham Daily Post.*

#### REPORT FROM DERBYSHIRE, YORKSHIRE, AND LANCASHIRE.

APRIL 12.—The Iron Trade continues in a state of unabated activity, and now that the quarterly meeting has agreed to confirm the maintenance of present rates there is an increased number of orders given out which had been held in abeyance. Great hopes are entertained of the continuance of the demand, as it is known that many of the foreign states are exceedingly bare of stocks. The accounts for the quarter are reported to have been settled, on the whole, satisfactorily; and, though the rate of discount is high, there is a tolerable trade being done on speculation. The iron trade in the district of Leeds is in such a flourishing state, and the workmen are being paid such a high rate of wages, that many have given notice that unless the masters will guarantee to pay that rate for a specific period the men will strike work. It can hardly be expected that the masters will agree to such an absurd proposition, and, therefore, if the men persist in it

a strike will be the result. The Coal Trade continues in a healthy position, and the orders are increasing, owing to a continued good demand from the southern markets. The lock-out of the Barnsley colliers is not likely to terminate at an early period. The distress in the district has begun plainly to manifest itself, and if the lock-out should continue it will soon assume a truly serious position. Shopkeepers are being made the greatest sufferers, and it is expected that those who have done most business on the credit system will be ruined. There are about 2000 and 4000 colliers out of employ, and about 8000 persons dependent upon them for a subsistence. The streets afford ample evidence of the state of the district, and the consequences will be serious if this state of things should be of much longer duration. Deputations of the men have offered to meet deputations of the masters, but attempts at negotiation have proved fruitless. The masters are determined not to go to the terms which were paid to the Oaks colliers.

The operation of the Trades' Unions is becoming so annoying to the ironmasters of Yorkshire that they are beginning to feel the necessity of refusing to employ any men who do not sign an agreement to withdraw from any clubs or societies which profess to control or interfere in any way between masters and workmen. The Bowling and the Low Moor Ironworks have already taken the steps, and as its wisdom and necessity cannot be doubted it will, probably, be very generally followed. Unanimity amongst the masters is now absolutely necessary to make the demands of the men to be successfully resisted, and to make them understand their proper position. John Marshall, the secretary of the Leeds district branch of the National Association of Ironworkers, has been committed to prison for writing threatening letters to ironmasters.

A Leeds colliery proprietor, named William Newton Ackroyd, has been committed for trial on a charge of forgery; and on Wednesday, the father, W. Ackroyd, was committed for trial for fraud in a series of offences against the Bankruptcy Act.

The mines in the Peak of Derbyshire are, on the whole, doing tolerably well, and considerable interest is felt in the success of the Staffordshire railway scheme, which will give to many of the Derbyshire districts railway facilities which are not now possessed.

The carriage of coal forms such an expensive item in lead mining management, so as to absorb a considerable portion of the ore got, and when the different companies can get this article per railway direct, it will be a great boon to them.

The Sheffield Waterworks Company have decided to apply to Parliament for a special Act, to raise 400,000*l.*, to create a commission to assess the amount of claims, and to levy a moderate addition for the charge for water.

The local stock and share markets have been more active during the week, and a tolerable amount of business has been done in bank and railway shares.

The colliery offices of Messrs. Barnes, of Grassmoor, Derbyshire, have been broken open, and some property stolen, but the thief has been captured and committed for trial. The Applications for Letters Patent include—Mr. David Mosley, of the Chapel Field Works, for improvements in the manufacture of cloths, composed of woven or fused fabrics or fibrous substances combined with India-rubber, gutta-percha, or balsa, or of their compounds; Mr. John Lascelle, of Slingby, for improvements in regulating the flow and surface level of water from reservoirs or other receptacles; Mr. Sidney Wood, of Henton Hall, and Joseph Stockley, for improvements in machinery for grinding, smoothing, and polishing plate-glass; Mr. John Lloyd, of Bonsall, for improvements in puddling iron; Mr. Robert Thatcher, of Brook Mills, for improvements in lubricating machinery for preparing, spinning, and doubling cotton and other fibres; Mr. Miles Simpson, of Dasebridge, for improved apparatus for covering elastic and other strands; Mr. Ernest Drone, agent to the Huelva Mining Company, for a new mode of manufacturing gunpowder suitable for war, mining, and general purposes; Messrs. John Todd and Sons, of Bradford, for improvements in machinery of apparatus for combing wool or other fibrous substances; Mr. Alfred Earnshaw, of Shadwell Park, for improved means of connecting rails for railways, which means are also applicable for connecting beams and girders

their tests in the most successful manner, really deserving all the praise they got. The success of these two plates obtained for Petin, Gaudet, and Co., an order from our Admiralty for plates to the value of about 2500*l.* sterling, half being of 4*½* and the remainder 5*½* inches. On the delivery of these at Portsmouth Yard they were at once seen to be of a very inferior manufacture to the "sample" plates, the successful test of which had procured the order. A certain number were, therefore, selected for testing, but not one passed the test laid down by the Admiralty in their contracts, and the whole were re-shipped to France, with the exception of some three or four which had pieces of their metal cut out as samples for the Iron-plate Committee, and for which, therefore, the makers must be paid at their contract price, 45*l.* and 50*l.* per ton. The tests above mentioned will again raise the French standard.

**METALLIC ALLOY.**—An alloy, described as applicable to the manufacture of all metal articles, bells, hammers, anvils, rails, non-cutting tools, and other articles, has been patented by Mr. H. Micolon, of Paris. The alloy consists of iron, preferably in the form of waste or ribbons, or of tin and steel, with manganese or borax. It takes 20 parts of iron turnings or tin waste, 50 parts steel, 4 parts manganese, and 4 parts borax; the proportions may be varied. When desired to increase the tenacity of the alloy, two or three parts of wolfram are added. When the cupola is ready he pours in the iron and steel, then the manganese, next the borax, and he re-charges with coke or coal; the metal is thus in direct contact with the fuel in the cupola, and by quickly running the fused mass into moulds, bells which possess the sonority of silver, whilst the cost is less than bronze, may be obtained. When it is desired to give the articles made the appearance of bronze or copper they are electro-coated. When the metal is employed in the manufacture of rails, anvils, &c., it is run over a core of iron. To impart malleability to the alloy he anneals it. The annealing softens the alloy, and allows it to be cut and turned to ornamental and other forms. For edged tools the alloy may be annealed, and then tempered to harden the cutting edge.

#### STANNARIES OF CORNWALL.

##### THE VICE-WARDEN'S EXPOSITION OF THE COST-BOOK SYSTEM.

A vast amount of highly important information bearing upon the constitution and management of cost-book partnerships was embodied in the judgment of the Vice-Warden of the Stannaries, given in the case of the West Tolvadden Mining Company. The question raised was whether Mr. Richard Stone, of Derby (who contended that he held 500 of his shares as trustee for the company), should be settled on the list of contributors in respect of 550 shares, or of 50 shares only. The company originated in 1858 with a small party of two or three miners and a London broker, named Brunton. The mine is situated near the Land's End, and it was to be worked on the so-called Cost-book Principle, without any special rules or instrument of settlement; and was at the meeting in May, 1858, in London, declared to be divided into 5120 shares, of which Brunton at that time was the owner of the half. In December, 1859, a committee of management was appointed, after which the general or special meetings of the company are recorded with tolerable regularity, three or four times in each year, in one or the other of two cost-books; but from the beginning, in 1858, until August, 1861, no list or enumeration of shareholders is entered in any extant book of the company—a most important deviation from the legitimate practice of such companies, in which lists of shareholders are required to be kept for inspection, both of co-adventurers and creditors, and production of them can be enforced by statute 18 Vic., cap. 32, sec. 22.

A committee of management is not necessarily incident to a cost-book mine company, though in large concern it may be desirable; but no particular powers are usually conceded to them other than those which belong to any other manager of a mine or behalf of a mining company. It is the duty of such managers to superintend generally and to advise on the works, and they are competent to authorise such contracts of an ordinary kind as are essentially necessary for carrying on the works with effect. Extraordinary or unusual contracts, or arrangements involving a large outlay, ought to be reported to a general meeting for their sanction. They are also to submit to such meetings the reports of local agents on the mine, to state the financial condition of the company, and propose such calls or dividends as the case may justify. The powers of these managers, whether shareholders or not, in such mine companies as are not governed by fundamental regulations specially adopted by them, which may be at variance with the normal usage of cost-book companies within the Stannaries, are illustrated by many adjudged cases at common law.

In August, 1860, a set of written rules and regulations were introduced by the committee at a general meeting, and are said to have been read and approved thereat and circulated. Whether these rules were adopted by competent authority is open to question, for the majority of a meeting of shareholders are not usually competent to bind all the partners in a concern to any change in the constitution of the company. They were circulated by printing them on the backs of circulars issued to shareholders, and it may be that the acquiescence of two years and upwards has confirmed any irregularity of this kind. In two respects these rules are at variance with the general practice of cost-book mines. They profess to make a mere majority of votes present at a meeting binding upon all shareholders, present or not, and they give a power to declare shares forfeited for non-payment of calls; a process quite different from the customary process of the Stannary Court for the sale of so many shares only as may be necessary to pay the calls. In other respects the rules do not seem to depart materially from the common practice of these local companies. The committee is to "manage the affairs of the company, subject to the directions and resolutions of general meetings.

This company had hitherto worked on a small scale, and the number of shareholders seem to have been small. The silence of the records and papers of the mine as to the number of shareholders for three years and a half is tolerably conclusive of this fact. In the latter part of 1860 the works on the mine became expensive, the calls were unproductive, and it became necessary to raise adequate funds.

It appears that at this period Mr. Richard Stone, of the Wardwick, Derby, having

consented to purchase 500 of the shares held by Mr. Brunton at 4*l.* per share, and also

to pay the calls due upon them *vice*, another 4*l.* per share; the committee of management, on behalf of the West Tolvadden Mining Company, in accepting the offer of the said Richard Stone, engage to hold him harmless, and to pay back to him, on account of the said company, any loss which he may sustain by the sale of the said 500 shares, including the amount he may pay in calls, and also the amount due for interest at the rate of 5 per cent. annum. A bond to this effect was drawn and signed by the committee. Stone contended that at the same time he executed a formal declaration of trust, but there was no evidence of the fact, and the Vice-Warden did not, therefore, consider what its effect might be. The Vice-Warden observes—"The transaction, as set forth, seems to me a simple sale by A to B, at the instance of C, D, E, F, and in reliance upon their indemnity from loss in case of re-sale. The shares sold were the *bona fide* property of Brunton, from whom the company had been unable to extract the calls. From that time down to the present Stone's name is in every list of shareholders for 550 shares, except in one (June, 1862), where the blank column has been filled in with 50 in pencil over against his name. In my opinion, I am bound to settle Stone as a contributory for 550 shares, subject to a question which may hereafter arise when the rights of contributors come to be adjusted, *inter se*—viz., whether the managers who guaranteed him from loss are not liable to indemnify him, equally, out of their own pockets? To a certain extent he has already indemnified, by putting in suit the bond executed by them at the meeting in January, 1861." In order to throw the burden of this indemnity on the company, and to relieve both Stone and the managers, it was alleged that the transaction was sanctioned or ratified at the next general meeting of the company, but both Mr. Stone and the Chairman (Mr. Weston) admitted that no resolution of approval or disapproval was passed. The report of the meeting is a full one, and is signed, and seemingly corrected, by Weston, and it takes no notice whatever of either bond or trust, nor is there any mention made in it of the extraordinary terms of this sale to Stone, or of any sale at all to him. Such a transaction would be naturally specified in the circular calling the meeting, and would form the subject of a distinct resolution, yet no such resolution is recorded. The Vice-Warden's impression is that Weston and the rest of the managers thought the arrangement was one within their own discretion, and, therefore, executed the bond and concluded the bargain without thinking of ratification, or of reserving it for future subjection to the shareholders; and he continues—"I am satisfied that this particular transaction was never either confirmed by, or even made known to, that meeting, or to any shareholders, except the parties immediately concerned in it; and I, therefore, think it unnecessary to consider what the effect of such confirmation would have been in binding all the absent and future shareholders in this company, which was a common law, unincorporated partnership, the members of which can only be made to contribute to liabilities incurred while they were such. It is not a case in which time and acquiescence would help to fix the present existing shareholders, seeing that the public books of the company convey no information or notice that could inform them of the contract made with Stone."

Since the day upon which the evidence alluded to was taken before the Registrar, Stone and Weston set up another objection. They now produce from the custody of Weston a written relinquishment found since September last, and alleged to have been delivered to Weston at the date of it—April 25, 1862. The Vice-Warden remarks that "a spontaneous relinquishment to the company of shares by one who professes to be only a trustee of the company seems not to be a very intelligible or consistent course; but I am not satisfied that there was any effectual relinquishment in point of fact. It is a question of fact, rather than law. But if there had been an effectual relinquishment at the date of it, I do not see any objection to the insertion of Stone's name as a contributory to the extent of the shares so relinquished. In the case of an ordinary cost-book mine in Cornwall, a shareholder may cease to be a partner or member of the company by retirement, with certain formalities, subject to payment of past calls. The partnership is then dissolved as between him and his co-adventurers, and he ceases to be bound by their future contracts; but he continues liable on all contracts sanctioned by him on his authority, as well as to an account as between him and his late partners. His share of liability does not devolve on them, nor do they undertake to indemnify him against his fair share of such responsibility. He continues to be a person liable in law and equity to pay the debts of the company according during his ownership of the shares, and, therefore, liable to be put on the list of contributors under the Companies Act, 1862, under which both creditors and shareholders are, in effect, parties to the petition. This seems to be a short answer to the objection—A relinquishment would cut off a year of liability, and to that extent lightens his burden."

Other relinquishments are recorded, but that of Stone is not to be found in any book or file, or other record whatever, and the Vice-Warden observes that "such relinquishments are usually registered or filed by the purser, and are usually submitted to the next general meeting; but Dingle, the purser and secretary from 1861 to the present time, swears that no such relinquishment was ever received or seen by him, and that he never heard of it till the last affidavits of Stone and Weston. I will not say that the document is a fictitious one. I only say that no steps are taken to give effect to it as a genuine one, or to make it known to those whom it concerned to know it—the co-adventurers in the mine. Possibly, Weston knew that it would have been unsatisfactory to attempt to use it; for it was a rule in this, as in most other mine companies, that a relinquishment is ineffectual to release the shareholders from calls remaining unpaid on the shares so surrendered. Now, the last call made before April 25 (the date of the relinquishment) was then, and still remains, unpaid. The call of Feb., 1862: Stone excuses this by saying he was not told of this call, and he shows some late circulars with blanks left for arrears, which are usually notified in them, but he does not produce the circular for the call itself, which he must have received, for he has paid it to the extent of 50 shares, and only refused to pay more of it."

The Vice-Warden remarks that he has no doubt that the reason why Stone refused to pay more was, that when he found he had made a bad bargain, and that the calls were coming in upon him, he remonstrated with Weston, who then suggested the defence that the shares were not actually his, but only held in trust for the company, and that Weston then gave notice to Dingle, the purser, to demand no more calls on the 500 shares, but only on 50. And that was doubtless the reason why Stone refused to pay on the 500 shares, not only in respect of the calls made *after* the relinquishment, but also of the call on 500 shares made in Feb., 1862, *before* it. It appeared from a letter of Dingle, the purser, dated June 19, 1862, annexed to the affidavit of Stone, sworn on Feb. 8 last, that he had been induced to reduce the demand of payment solely on the

faith of the representation of Weston—that of the shares in Stone's name only 50 shares were actually his. "If this be right," says Dingle, "then please pay up your calls on 50."

Weston, in his last affidavit (Dec. 30, 1863), states the relinquishment, says he wrote to Dingle to make no more calls on Stone for the 500 shares, but no record of the fact is on any minutes of the committee, and the Vice-Warden continues that he is persuaded that Dingle's remissness in not calling upon Stone for the full amount due from him on the several calls due in 1862 was against his own judgment, and in submission to the representation of Weston, who, of course, earnestly desired to relieve Stone, as well as himself and colleagues, from the consequences of the bad bargain which Stone had been induced to make.

In April, 1863, after the order to wind-up, a general meeting was called to consider, among other things, the affairs of these shares. Stone there explained his position as trustee of the company. The report (in the handwriting of Weston) then states a unanimous resolution that the official liquidator be recommended to treat the shares so held by Stone "as the property of the company." As to the relinquishment, no notice is taken of it either by Weston or Stone. Under these circumstances, the Vice-Warden considered that the fact of relinquishment had not been satisfactorily proved, and Mr. Stone's name was, consequently, retained on the list of contributors for the full amount.

**ACCOMMODATION BILLS.**—The case *ex parte* Barker, before the Lord Chancellor, on appeal from a decision of one of the Bankruptcy Commissioners, was where a young man had started as a trader with 500*l.*, of which 400*l.* was borrowed money (afterwards repaid), and in the course of two years became bankrupt through the failure of a large firm, who had prevailed on him to accept accommodation bills to the extent of 419*l.*, the Lord Chancellor affirmed the Commissioner's decision, refusing an order of discharge on the ground that the bankrupt had accepted the bills not having at the time any reasonable or probable expectation of being able to pay them. The Lord Chancellor said the bankrupt had been made the tool of others in the perpetration of a fraud on the public. This was one of those cases which had now become of such common occurrence in the commercial world, in which great frauds had been perpetrated by the reckless issue of accommodation bills. He could not look on conduct of this kind otherwise than as a concert between the parties to impose on the public; the bankrupt had undoubtedly induced the persons who gave credit to the bills by discounting them to give such credit on an implied representation that he could pay them at maturity, and this must be looked on as a misrepresentation, and a grave commercial offence—one of those offences which the Bankruptcy Act of 1861 was specially intended to meet.

#### Crown Mineral Sets to Let.

##### LLANFACHRETH PARISH, MERIONETHSHIRE.

**THE COMMISSIONER OF WOODS, &c., in charge of HER MAJESTY'S LAND REVENUE IN WALES is PREPARED TO RECEIVE APPLICATIONS for a LEASE or LEASES of TWO MINERAL SETTS in the above parish, containing respectively 276 a. 1 r. 14 p. and 154 a. 3 r. 26 p., situate in the neighbourhood of the Cwmhees and Dolfrwyng Mines.**

Applications must be addressed, on or before the 20th of April, to the Hon. JAMES K. HOWARD, Office of Woods, &c., Whitehall-place, London, S.W., and each application must be accompanied by a remittance of 10*l.*, payable to Mr. W. C. HIGGINS, the Receiver General at the office.

#### India Office.

**BY ORDER OF THE SECRETARY OF STATE FOR INDIA IN COUNCIL,** notice is hereby given that the DIRECTOR-GENERAL OF STORES FOR INDIA will be READY, on or before MONDAY, the 18th instant, to RECEIVE PROPOSALS in writing, sealed up, from such persons as may be willing to SUPPLY—

#### CAKE COPPER.

And that the conditions of the said contract may be had on application at the India Store Office, Cannon-row, Westminster, where the proposals are to be left any time before Two o'clock P.M. of the said 18th day of April, 1864, after which no tender will be accepted.

GERALD C. TALBOT, Director-General.

**SECRETARY—TO SOLICITORS AND PROMOTERS OF PUBLIC COMPANIES.**—A GENTLEMAN, fully qualified by birth and education, is DESIROUS of OBTAINING an APPOINTMENT as SECRETARY to a FIRST-CLASS COMPANY. The highest references can be given.—Address, "Z. A.," 8, Bircham-lane, London, E.C.

**THE PROPRIETOR of an EXTENSIVE IRON PYRITES MINE,** who uses part of the ore for manufacturing sulphuric acid, WISHES TO ENTER INTO ARRANGEMENTS with other manufacturers, with a view to FURTHER UTILISE the RESIDUES.—Letters (paid) to be addressed to Mr. ALBERT CHAMER, Nürnberg, Bavaria.

**A NEW STEAM FUEL—SMALL COAL AND SLACK COAL UTILISED.**—THE INVENTOR of a NEW FUEL, in the production of which ANY QUANTITY of SMALL COAL may be PROFITABLY UTILISED, and which, whether used for steam or domestic purposes, will be ONE-FIFTH the COST of COAL, and of THREE TIMES the HEATING POWER, is PREPARED TO GRANT LICENSES to THOSE DESIROUS of USING the INVENTION. Liberal terms will be offered.—Letters addressed Mr. A. WALL, MINING JOURNAL Office, 26, Fleet-street, London, E.C.

**A GENTLEMAN,** having a THOROUGH KNOWLEDGE of CHEMISTRY in its APPLICATIONS to METALLURGY and MANUFACTURES, WISHES for an APPOINTMENT, in which the above requirements are AVAILABLE. He is also open to give advice to patentees and others on improvements in metallurgical and manufacturing processes, or the machinery connected therewith.—Address, "Chemicus," MINING JOURNAL office, 26, Fleet-street, London, E.C.

**A GENTLEMAN,** with good certificates from one of the best Austrian Mining colleges, and a THOROUGH KNOWLEDGE of SILVER ORES, and the VARIOUS MANIPULATIONS to which they are subjected, besides a great PRACTICAL EXPERIENCE in ASSAYING, SMELTING, and SURVEYING, and all that belongs to mining in general, WISHES for an APPOINTMENT.—Address, "Z. A.," 8, Bircham-lane, London, E.C.

**A PRACTICAL MINING ENGINEER AND SURVEYOR,** age 38, is OPEN to an ENGAGEMENT, to UNDERTAKE, or RENDER ASSISTANCE IN, either UNDER or ABOVE GROUND SUPERVISION, SURVEYING, LEVELLING, MAPPING, &c. Salary not so much an object as permanent employment.—Apply to "N. D.," MINING JOURNAL office, 26, Fleet-street, London.

**WANTED, a MINING CAPTAIN, to TAKE CHARGE of LEAD MINES situated in the SOUTH OF IRELAND.** Parties wishing to apply should forward references and copies of testimonials as to their thorough knowledge of mining, and of dressing of ores, and should also understand dialling. They will likewise mention salary expected.—Applications to be addressed to Mr. J. P. O'REILLY, Secretary to General Mining Company for Ireland (Limited), 29, Westmorland-street, Dublin.

**WANTED, a 24 in. WINDING and STAMPING ENGINE.** Particulars to be forwarded to Mr. Thomas Hollow, Lelant, Hayle. March 28, 1864.

**TO IRON MANUFACTURERS.—A PARTY in GLASGOW,** who has an extensive connection, and who could induce a large trade with Clyde shipbuilders, DESIRES a FIRST-CLASS AGENCY for ANGLE and T-IRON, SHIP and BOILER PLATES, and SHEET IRON, or for any of these singly.—Address "M. A. C.," care of Messrs. Anderson and Watt, 64, Buchanan-street, Glasgow.

**TO JOINT-STOCK COMPANIES AND OTHERS.—TO BE LET,** a LARGE VIRGIN COAL FIELD, in the CENTRE of the GLAMORGAN BASIN, containing all the best steam and other veins of coal, and through the heart of which the Taff Vale Railway runs for about a mile.—For particulars, apply to "D. V. C.," at Messrs. Howes and Co., No. 7, Thavie's Inn, Holborn Hill, London.

MERIONETHSHIRE.

**TO BE DISPOSED OF, an EXTENSIVE GEOLOGICAL GRANT of LAND,** possessing AURIFEROUS QUARTZ and GREENSTONE LODES.—Particulars, with terms, may be had from R. W. WINNE, Esq., Cefn-y-mera, Llanbedr, Merionethshire or Mr. H. P. M. OWEN, C.E., the same address.

**FOR SALE, 19½ in. FORCING PUMP, 14 in. LIFTING PUMP, HANF PUMPS, pumping crank, lifting screw, pit chain, and other colliery material.**—Apply to Mr. JOHN FARLER, Nailesa, near Bristol.

**BLAST ENGINES.—FOR SALE, TWO NEW BLAST ENGINES, complete.** Each will blow 6500 cubic feet of air per minute.—Apply to W. COULTHARD and Sons, engineers, Blackburn.

**DIVIDEND TEN PER CENT. PER ANNUM.—TO BE SOLD,** FIVE HUNDRED SHARES (of £1 each, fully paid-up), at par, in the WIVELISCOMBE SLATE COMPANY (LIMITED).—Apply to Mr. RUNDALL, 43, Moorgate-street, City.

**M ONEY.—CONTRACTORS and OTHERS can be ACCOMMODATED with LOANS, DISCOUNTS, &c.**—Apply to Messrs. WILKINSON and Co., monetary negotiators and arbitrators, &c., 25, Bircham-lane, London, E.C.

**THE WICKLOW COPPER MINE COMPANY.**—Notice is hereby given, that the HALF-YEARLY ORDINARY GENERAL MEETING of the shareholders of the Wicklow Copper Mine Company will be HELD at the company's offices, 43, Dame-street, Dublin, on SATURDAY, the 30th April, 1864, at One o'clock precisely, for the purpose of receiving the directors' report and statement of accounts, and for the transaction of the ordinary business of said meeting. The transfer books will be closed on and from Monday, the 18th inst., to and including Saturday, the 30th inst.

By order, HENRY A. CRUISE, Sec.

43, Dame-street, Dublin, April 9, 1864.

W. M. BROWNE, Sec.

Office, No. 5, Finsbury-circus, London, E.C., April 8, 1864.

**NOUVELLE MONTAGNE COMPANY.**—The ANNUAL GENERAL MEETING of shareholders will be HELD at the Hotel de Suede, Liege, on SATURDAY, the 30th April next, at One o'clock P.M.

By order of the Conseil d'Administration.

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## EAST WHEAL VOR TIN AND COPPER MINING COMPANY.

In 6000 shares, on the Cost-book System.

A committee of management will be chosen at the first meeting of shareholders.

BANKERS—The Alliance Bank, Lothbury, London.

The Helston Banking Company, Helston, Cornwall.

LONDON MANAGERS.

W. J. DUNSFORD, Esq., 9, Broad-street-buildings, E.C.

LOCAL MINING MANAGERS.

MESSRS. Joseph Vivian and W. C. Vivian, Reskarnie, Camborne, Cornwall.

SOLICITOR—Tufnell Southgate, Esq., 7, King's-bench-walk, Temple, London.

BROKERS.

MESSRS. C. and J. H. MacRae, 10, Tokenhouse-yard, and Stock Exchange, London.

The operations of this company are being carried on in the lands of C. W. Popham, Esq., situated in the Breage and Sithney mining district of Cornwall, which, from its past and present returns of tin, ranks as by far the most productive of that mineral in Europe.

The sett is very large and extensive, and is held for a term of 21 years from this date, at a minimum rental of £40 per annum, and a royalty of 1-24th of the value of the minerals to be raised and sold; and the whole of the machinery, plant, and leases have been purchased of Mr. Nicholas Smith, the former lessee, who has taken a large interest in the present company.

The situation is all that can be desired, being immediately eastward of Great Wheal Vor Mine; and all the lodes of the Old Wheal Vor Mine, from which tin of the value of upwards of £20,000 per annum has been raised and sold, traverse East Wheal Vor from east to west, as do the rich Wheal Metal and other lodes now being worked by the Great Wheal Vor Company, and yielding tin to the value of £200 to £400 per fathom.

The Old Wheal Vor Mine produced for a lengthened period the greatest quantity of tin ever returned by any one mine in the world; its returns were twice or thrice as large as the present yield of Dolcoath Mine, which, next to Old Wheal Vor, has been the richest and most profitable tin mine of modern times, and has given its fortunate proprietors £750 per share in dividends, and the present market value of the shares is £500 to £600.

When Old Wheal Vor was most productive the price of black tin was only £35 to £40 per ton, and on that low price the mine gave profits of £4000 per month; had the average price of black tin been then, as now, upwards of £70 per ton, the profits would have been £10,000 or £12,000 per month at the lowest estimate.

The present Great Wheal Vor Company's shares were, twelve months ago, selling at about £6 per 590th share, or (say) £36,000 for the mine; the market price since attained, in consequence of the brilliant discoveries of tin made in the Wheal Metal lode, has been £41 to £42 per share, or £245,000 to £250,000 for the mine, and the profits now being made are £18,000 to £24,000 a year, with every prospect of those profits being rapidly and continually increased.

There are upwards of six known and productive lodes in East Wheal Vor, only two of which are now being operated on, and from the shallow levels on these two lodes alone £12,000 or £13,000 worth of tin has already been raised and sold.

The strata in which the lodes are embedded being identical with the strata in Old Wheal Vor and Wheal Metal, it is the opinion of practical and experienced miners that an energetic continuance of the operations now carried on in sinking the shafts and driving the levels, will lead to the discovery at an early period of richer deposits of tin than have already been met with, and that a rich and profitable mine will be speedily laid open; the length on the Old Wheal Vor lodes being fully 700 fathoms, and on the rich Wheal Metal lodes fully 280 fathoms from east to west.

The Wheal Metal lode, now so rich and profitable in Great Wheal Vor, is standing entire in the southern part of East Wheal Vor; therefore, it will be apparent that the present Company's prospects, from vigorous operations being commenced on this lode, are most encouraging.

An important feature connected with the two lodes now being wrought is, that at about the 110 fathom level, these two lodes, viz., "Wheal Bramble" and "Smith's" lodes will form a junction, which junction, in this district, has usually been productive of an immense deposit of tin—and the levels now driving on these lodes are of the most promising description for yielding tin in profitable quantities.

The machinery and surface works of a large and extensive mine are already erected, and have cost £7500 or £8000 at the least; including this sum, and the costs incidental to sinking the shafts and driving the levels on the course of the lodes, a total expenditure has been incurred by previous adventurers of £35,000 to £40,000, so that active operations are being carried on without incurring any other immediate outlay than the ordinary working cost of a mine.

The mine is drained 65 fathoms below the adit level—or about 80 fathoms from surface—by a 40-inch cylinder pumping engine, which is considered of sufficient power to drain it to a much greater depth; a 30-inch stamping engine with sixteen heads of stamps, and the necessary apparatus for drawing the stuff from the mine, have also been erected; the other erections comprise calcining and counting houses, and the necessary buildings for workshops, &amp;c., dressing-floors, and other surface works have also been constructed; the whole of the machinery, buildings, &amp;c., being in good and efficient condition, repair, and working order.

With the view of continuing the exploration and development of the mineral resources of East Wheal Vor with the utmost rapidity and efficiency, and on a more extensive scale, the adventure has been re-constituted by the present proprietors on the Cost-book System, in 6000 shares, with a subscribed paid-up capital of £6000 in hand, which sum being wholly applicable to the development of the mine (in addition to the £35,000 to £40,000 already expended), competent mining authorities consider amply sufficient for placing it in a profitable position.

The present proprietors having already received applications for a large number of shares, have determined to receive applications from the public for a limited portion of the residue, at £5 per share; £2 per share to be paid as a deposit on application, and the remaining £3 per share on allotment, and if no allotment is made the deposit will be returned without deduction.

A committee of management will be elected at a meeting of shareholders to be held within one month after the closing of the share list.

Applications for shares, in the form annexed, may be made to the brokers; to the Alliance Bank; or to W. J. DUNSFORD, Esq., 9, Broad-street-buildings, London, E.C.

London, April 8, 1864.

## MINING MANAGERS' REPORTS, &amp;c.

From Capt. THOMAS GILL, Local Manager of Great Wheal Vor.

April 6, 1864.—East Wheal Vor Mine is in kilas, and near the junction of granite and killas, which agreeably to analogy is the place to find minerals in quantities, and the situation of the mine is in the slope of a hill in the same bed of killas in which the Great Wheal Vor and Metal lodes have been so productive. My opinion of the mine is very favourable, and if properly carried out I consider it a good speculation.

From Capt. EDWARD ROGERS, Manager of Wheal Grylls, and other Mines.

EAST WHEAL VOR is very extensive, the stratum is killas, and of the same congenial appearance as in the adjoining mines—Great Wheal Vor and Wheal Metal.

BRAMBLE LODE.—The engine-shaft is sunk 6 fms. below the 60 fm. level; the lode is large, producing occasional stones of tin; the sinking of this shaft should be pushed on as fast as possible, as from the present underlie of this lode and Smith's lode they will form a junction at about the 110 fm. level; a very important point to be arrived at, as judging from the indications on both lodes, which are highly mineralised in different metals, there may reasonably be expected a very rich deposit of tin at and near the point of junction. At the 60 fm. level there is a cross-cut just commenced; about 35 fms. driving will cut Smith's lode; these levels east and west should be driven, as the lode is large and tinny in different places, and from the extensive manner in which the bottom of the 50 fathom level east has been worked, I should think there must be a rich bunch of tin gone down, which from information I could get was worth £40 per fm.; this place is now full of water, and will be drained by extending the level below.

SMITH'S LODE.—At the 30 fathom level this lode is intersected by a cross-cut from the Bramble lode, and so far as seen is of a promising character, being 4 ft. wide, composed of blende, copper, and rich stones of tin, and should be vigorously operated on. The lode in the rise in this level is producing rich tin. Another important feature is, that Wheal Metal lode runs through this sett for 280 fms. in length, and being so rich in Great Wheal Vor Mine, there is every probability of this lode making rich deposits of tin when wrought on. I would remark the pitwork underground is in good working order, and the machinery at surface is sufficient for carrying on operations to a great extent; taking these things into consideration, I should say an outlay of £5000 would be sufficient to prove these points. I have here stated, when I have no doubt the mine would be put into a dividend position.

From Capt. MARK REED, Mineral Agent of the Rev. H. M. St. Aubyn, and formerly Manager of the Great Wheal Vor.

March 26, 1864.—EAST WHEAL VOR MINE is situated in the parish of Sithney; it is very extensive, and is in the same basin of killas as that of Great Wheal Vor, the same lodes running through the extent of the sett.

BRAMBLE LODE.—The engine-shaft is sunk 5 fms. below the 60 under adit, or about 80 fms. from surface, and partially worked at each succeeding 10 fms. below adit. It resembles Great Wheal Vor main lode in size and appearance, and is likely to be a continuation of the same. I would recommend sinking the engine-shaft with all possible speed to the junction of Smith's lode, which will take place about the 100 or 110, where favourable results may fairly be expected.

SMITH'S LODE.—This is intersected at the 30 by a cross-cut north from engine-shaft 60 fms., and driven on its course about 30 fms.; this lode varies from 2 to 4 ft. wide, composed of friable quartz, chlorite, and rich work for tin. I recommend a shaft being sunk from surface as expeditiously as possible, to be communicated with the 30, and continued below, where it is more than probable that tin in remunerative quantities will be obtained. I know not where a more inviting property is to be found, with so much work done which will beneficially advance the future working, and save much time and money in the exploration of the mine. Having had the management of the Great Wheal Vor for eight years in the former working—viz., from 1858 to 1864, when the tin raised exceeded 200 tons per month—I can write with great confidence on this mine, as the price of tin then varied from £35 to £45 per ton, and it is now about £70 per ton. The strata in each of these mines are identical, being in the same precise locality. From information I have received, there has been sold from £12,000 to £13,000 worth of tin from the short extent of ground wrought on the lodes. This strengthens my view of the great value of this mining property, and if it is worked vigorously, under careful and able management, in my opinion a capital of about £5000 to £6000, with the returns of tin, will be sufficient to bring the mine into a profitable state of working. There is a 40-inch cylinder pumping-engine with two boilers at work, keeping the mine thoroughly drained, horse-whims, &amp;c.; also a 30-in. cylinder stamping-engine with 16 heads of stamps attached, calciner and dressing-floors, in good working order—in fact, all necessary plant for an extensive field of mining. I would also remark that you have several highly promising side lodes, including the rich Wheal Metal, which runs a distance of nearly 300 fms. through your sett; and other lodes both north and south from your present workings, which being nearly parallel with those already wrought, will I, have no doubt, ultimately much enhance the value of this property.

North Roscar, April 13, 1864.—At your request I have carefully inspected this mine, of which the following is my report:—The sett is very extensive, is situated in a first-rate mining locality, being immediately east of the celebrated Wheal Vor and Sithney Wheal Metal, formerly forming a part of the same. It is traversed by the same lodes, and is in the same formation of clay-slate in which Great Wheal Vor has been and still is so exceedingly rich in tin; therefore I am decidedly of the opinion that the operations which have just been commenced by the East Wheal Vor Company will be attended by equally successful results. The mine is well supplied with machinery and materials for carrying on an extensive tin mine without let or hindrance.

JOSEPH VIVIAN.

From W. C. VIVIAN, one of the Local Managers. April 8, 1864.—East Wheal Vor Mine is situated in the Great Vor mining field. This wonderfully mineralised district consists of a formation of killas, or clay-slate, about two miles length from east to west, resting between two ranges of granite hills. The western half of this great basin is occupied by the Great Wheal Vor Mines, which have been and are again becoming the richest and most important of all the Cornish tin mines. East Wheal Vor occupies the eastern half of the same extensive basin of killas, resting

similarly on the foot of the eastern range of granite hills, and is traversed by all the lodes of the Great Wheal Vor, viz.—those which have yielded such large profits in the past, and those on which such splendid discoveries have recently been made. The sett is of great extent, being nearly a mile long in the main lodes, and about half a mile in width. Its geological features are precisely the same as those of Great Vor, and the lodes, as far as they have yet been seen, present the same indications, and are in similar strata. There are six known lodes in the sett; on one a pumping-engine has been erected, and the shaft sunk to the 60 fm. level; levels have been driven at various points, from which £12,000 or £13,000 worth of tin has been raised and sold. The machinery and plant are all that is necessary for carrying on the mine in the most vigorous and efficient manner, and I consider this mine to be in one of the finest pieces of tin mining ground in Cornwall, not excepting its adjoining neighbour, Great Wheal Vor, and is becoming equally rich in its present working on other lodes, it must be taken into account that in East Wheal Vor the same lodes which gave the former large profits in Great Wheal Vor, as well as those which are now so rich, run through the entire length of East Wheal Vor in comparatively virgin ground. It is, therefore, only reasonable to expect that an equally large quantity of tin will be met with in the eastern half of this great mining field occupied by East Wheal Vor. And I have no hesitation in stating that all that is wanted to ensure success is perseverance in driving the levels and cross-cuts, and sinking the shafts in an efficient and miner-like manner, without which being energetically done no mine, however rich, can become a success.

## FORM OF APPLICATION FOR SHARES.

To the Manager of East Wheal Vor Tin and Copper Mining Company.

In 6000 shares, on the Cost-book System.

Sir,—I hereby agree to take shares in this company, or any less number that may be allotted to me, at £2 per share, and I herewith hand you a cheque for £ being the deposit of £2 per share on such shares; and I further agree to pay the remaining sum of £2 per share on shares in the East Wheal Vor Tin and Copper Mining Company.

Name ..... Date ..... Address and description .....

## BANKER'S RECEIPT.

East Wheal Vor Tin and Copper Mining Company.

In 6000 shares, on the Cost-book System.

April, 1864.

Received of for the credit of Nicholas Smith, Esq., and others, the sum of £ being the deposit of £2 per share on shares in the East Wheal Vor Tin and Copper Mining Company.

£ ..... For the Alliance Bank.

CROWAN AND WENDRON TIN AND COPPER MINE (LIMITED).—Adjoins the celebrated Crever and Wheal Abraham Mines, is leased from the same lord, and contains the same run of lodes.—Apply for prospectuses and shares to JOHN BLACKBURN, solicitor and coroner, 63, Albion-street, Leeds.—Capital £8000, in shares of £1 each; 5000 are already taken up.

MORRIS SILVER-LEAD MINE.—LLANIDLOES, MONTGOMERYSHIRE.

On the Cost-book Principle. Divided into 4096 shares.

SECRETARY—Mr. Thomas Roach.

TEMPORARY OFFICES.—No. 9, UNION-COURT, OLD BROAD-STREET.

## ABRIDGED PROSPECTUS.

This company has been formed for the purpose of working the mineral deposits which exist in vast quantities in the Gornal Hill, Llanidloes, Montgomeryshire. Several lodes, possessing all the elements for producing lead ore, have been discovered and sufficiently wrought upon to warrant a vigorous exploration of the property. The situation of the grant as a field for mining enterprise is undeniable—the many natural advantages it possesses, such as timber growing on the spot, ample water-power, and its accessibility, being surrounded with good roads, render it a most desirable speculation. Extensive operations can be carried on at a comparatively trifling cost, and it is the opinion of competent judges that it requires nothing but a vigorous prosecution to ensure profitable results.

At a meeting of the shareholders of Morris Silver-Lead Mining Company, held this 6th day of April, 1864, the accounts for January and February, showing a balance in favour of the adventures of £64 18s., having been examined,—

It was resolved:

That the same be and are hereby allowed and passed.

That the present number of shares (1024)—in order to comply with the wishes of gentlemen desirous of taking an interest in the undertaking—be and are hereby subdivided into 4096 shares.

A limited number of shares, at £1 each, are offered to the public, for which early application should be made to the secretary, Mr. Thomas Roach, at the temporary offices of the company, 9, Union-court, Old Broad-street, E.C., where detailed prospectuses, capital reports, and every information may be obtained, and where samples of the ore, barbary, &amp;c., may be seen.

THE TRELECH LEAD MINING COMPANY (LIMITED).

To be incorporated under the Companies Act, 1862, by which the liability of each shareholder is limited to the amount of his shares subscribed.

Capital, £25,000, in 25,000 shares of £1 each, of which a large portion has been already subscribed. With power to increase.

Deposit, 5s. per share on application, and 5s. on allotment.

Future calls not to exceed 2s. 6d. per share, at intervals of not less than three months.

DIRECTORS. L. E. W. MORRIS, Esq., Carmarthen. JOHN MAUGHAN, Esq., Leamington Priors, and 7, Lancaster-terrace, Regent's-park. JOHN LEWIS, Esq., merchant, Carmarthen. R. B. TENNETT, Esq., merchant, 12, Walbrook. GUSTAV HIRSCHFELD, Esq., 24, Cannon-street West. RICHARD HUMFRAYS, Esq., 72, Wimpole-street, Cavendish-square, London. JOSEPH LAVENDER, Esq., 26, Bedford-row, London. (With power to add to their number.)

BANKERS—London Bank of Scotland, 24, Old Jewry; Messrs. Wilkins, Carmarthen. SECRETARY—F. R. Greenhill, Esq. MING AGENT—Captain R. Sanders.

OFFICES (pro tem.)—63, GRACECHURCH STREET, LONDON.

## ABRIDGED PROSPECTUS.

This company is formed for the purchase of the valuable lead mines called the Carmarthen United Mines, situated in the parish of Trelech, Carmarthenshire, as held by them under various favourable leases, at very moderate royalties, together with the water-course and plant, machinery, dwelling houses, &amp;c., and for the purpose of further developing and extending the workings of the said mines.

In the event of a sufficient number of shares not being subscribed all deposits will be returned in full, as also in cases where no allotment is made.

Specimens of the ore can be seen at the British Museum, and at the Geological Museum, in Jermyn-street, and also at the office of the company, where prospectuses, containing full reports of Mr. Evan Hopkins and Capts. Waters and Sanders, with forms of application, may be obtained, as well as of the bankers of the company.

THE DEVON CONSOLS TIN MINING COMPANY (LIMITED).

Capital £15,000, in 15,000 shares of £1 each.

Deposit 10s. on application, and 10s. on allotment.

Incorporated under The Companies Act, 1862, whereby the liability of each shareholder is specially limited to the amount of his shares.

DIRECTORS. THOMAS BRADSHAW, Esq., Hampton-court. JAMES BRAID, Esq., M.B., Director of Les Grandes Mines Consolides de Villemagne (Limited). WILLIAM CREMER, Esq., Director of the Terriclo Copper Mining Company. J. O. MASON, Esq., Director of the London, Birmingham, and South Staffordshire Banking Company (Limited). B. L. PHILLIPS, Esq., Director of the European Bank (Limited). GEORGE VESEY, Esq., Director of Les Grandes Mines Consolides de Villemagne (Limited). LIEUT.-COLONEL WEMYSS, Director of the Haven Silver-Lead Mining Company (Limited).

## TO COAL MASTERS, IRON MASTERS, AND OTHERS.

MR. HILLIARD WILL SELL, BY AUCTION, at the Navigation Inn, Froghall, on Thursday, the 5th day of May, 1864, at Two o'clock in the afternoon, in one or more lots, and subject to such conditions of sale as shall be then produced, a VALUABLE FREEHOLD ESTATE, called HARSTON WOOD, containing 37 A. 0. R. 11 P. (more or less), situate at FROGHALL, in the parish of KINGSLEY, in the county of STAFFORD, and adjoining the Coalton Low Railway.

The estate contains VALUABLE MINES OF COAL, RED IRONSTONE, and OTHER ORES, and adjoins property in which such mines are being worked.

To view the property, apply to Mr. WILLIAM PEGG, Fox Wood, near Froghall; and to inspect plans, or for any further information, apply to the owner, Mr. RICHARD FIFER SMITH, or to Mr. THACKER, solicitor, both of Cheadle, Staffordshire.

VALUABLE COPPER MINE FOR UNRESERVED SALE.—

TO BE SOLD, BY AUCTION, and without reserve, on the 4th day of May

proximo, at One o'clock precisely, on the mine, near North Molton, in the county of Devon, the LEASE (renewed for 21 years on the 17th day of February, 1864, at a royalty of one-fifteenth, or a sleeping rent of £100 per year) of the whole of the extensive BAMPFYLD COOPER MINES, including the LARGE and IMPORT-ANT ADDITIONAL SETT recently granted by Lord Poltimore, free of any extra charges, together with the entire and complete PLANT and MACHINERY thereon, with large commodes dwelling-house, cottages, offices, and garden, HORIZONTAL STEAM ENGINE and BOILER, winding gear, &c., large WATER WHEELS, pumps of various sizes, ropes, chains, ladders, jiggers, hatches and sieves, iron, timber, wagons, shears, whisks, whisks, launders, balance balls, drawing wheel and crushers, and all other requisites for the efficient working of the mine. Also, four Bordan's machines (never used), pans 6 ft. 8 in. diameter within, 15 cwt. each, with four iron balls 2 tons each, and four ditto 16 cwt. each. The whole on view, with the necessary plans, any time prior to the day of sale.

Parties can proceed to the mine via Barnstaple or South Molton road station. N.B.—The average produce of the above far exceeds in quality that of any other English mine, 1582 tons of ore having realised £22,334 nett, and this including halvans, up to December last; and the vendors, having no alternative but to wind-up the present company, have to state their sincere belief that a small expenditure of further capital would make this one of the most remunerative mines in the kingdom.

The whole mine is now set to tributes at 10s. in £1: is sunk to the 70 fm. level. The 58 fm. level is driven to No. 4 cross-course, and so soon as the lodes on the western side of this cross-course shall have been intersected the most satisfactory results may, with every reasonable certainty, be expected. The mine has been thoroughly inspected at different periods, and very favourably reported upon by Captain James Richards, of the Devon Great Consols; Capt. William Richards, of Wheal Basset; Capt. James Pope, of Wheal Basset; Gen. Henwood, Esq., of London; Wm. Hensley, Esq., of Marazion; and others.

Catalogues, together with conditions of sale, at 1s. each, to be had at the mine, or application to Capt. Pope; or in Liverpool from Mr. CHAS. HANFORD, Hope Chambers, Leather-lane, Dale-street.

MONMOUTHSHIRE.  
VALUABLE MINERAL PROPERTY FOR SALE.

By Trustees under the direction of the will of the late Owner.

## TO BE SOLD BY TENDER, the following FREEHOLD HOUSES AND LANDS, situate at ABERCARNE, in the parish of MYNYD-DYLLWYD, in the county of MONMOUTH: also, a COPYHOLD ESTATE near thereto, held of the MANOR OF ABERCARNE, which from their proximity to the ABERCARNE COLLIERIES, all the SEAMS and VEINS OF COAL, IRONSTONE, FIRE-CLAY, and other MINERALS discovered in those pits are supposed to be found under these properties, and which will be disposed of with the same.

The FREEHOLD PROPERTY, called "TIR THOMAS SHON," is numbered in the title-map and book of reference of the said parish as follows:—2806, 2807, 2808, 2810, 2812, 2814, and 2824, and contain 17 A. 2 R. 19 P., upon part of which are six dwelling-houses at will, and upon another part are twelve houses, erected by different tenants, under leases; the surface of this property produces an annual rental of £63.

GLANSHON ESTATE is copyhold, held of the Manor of Abergavenny, and numbered in the title-map and book of reference of the said parish as 2869, 2870, 2871, 2873, 2876, 2877, 2878, 2879, 2880, 2882, 2883, 2885, 2889, 2890, 2891, 2892, 2893, 2894, 2896, 2897, and 2898, and is described in the said book of reference as containing 74 A. 3 R. 14 P.; the surface of this estate is now let at the low rent of £40 a-year.

The freehold part is well situated for building, and it is expected in a few years a large portion will be let for that purpose; and with regard to the minerals under both properties, it is stated by competent judges that the veins lie well for working, and are unbroken by any known fault; and, as they are intermixed, and form part of a large tract of maiden land in that locality, the minerals under them, and the facilities they offer for the working of the minerals in the adjoining lands, render them a valuable acquisition to the owners of such lands, to capitalists wishing to embark in mining pursuits.

Tenders to be addressed to Mr. W. G. REES, Holly House, near Newport, Monmouthshire, from whom all further information may be obtained.

## IRON AND STEEL PATENTS FOR SALE.—The OWNER of VALUABLE PATENTS for the MANUFACTURE of FIRST-CLASS STEEL at a low price, and for the UTILISATION of BLAST FURNACE CINDERS, being fully occupied with the development of the inventions in America, is DESIROUS of SELLING the ENGLISH, FRENCH, and BELGIAN PATENTS.—Terms, under £30,000 for the whole.—Letters addressed "Union" MINING JOURNAL office, 26, Fleet-street, London, E.C., will be forwarded.

WHEAL MARY GREAT CONSOLS MINE.—TO BE SOLD, BY PRIVATE CONTRACT, the MINE and MINERALS of WHEAL MARY GREAT CONSOLS, ST. NEOT, CORNWALL, having engine-power sufficient to develop the property. Many of the present adventurers are willing to join a party who may purchase in the further prosecution of the mine.—For further particulars, apply to J. BROWN, Esq., Rose Hill, Chesterfield; W. BRADLEY, Esq., Sono Brewery, Sheffield; J. C. ISAAC, Esq., merchant, Liskeard; or to Mr. C. THORPE, at the mine. March, 1864.

IMPORTANT TO COAL PROPRIETORS, CAPITALISTS, AND OTHERS.—The OWNERS of VALUABLE MINES of COAL, lying within and under a compact freehold estate of 150 acres, situate about three miles from the important manufacturing town of Blackburn, Lancashire, are PREPARED to treat for the ABSOLUTE SALE of the COAL, or to enter into favourable arrangements for leasing the same for a term of years. Good turnpike roads intersect the estate, and the same is within very easy distance of railway and canal.—For further particulars, apply to Messrs. ROBINSON and SON, solicitors, Blackburn.

COAL PROPERTY IN SHROPSHIRE.—An ESTATE in SALOP, declared by competent persons to CONTAIN COAL in ABUNDANCE beneath its surface, and upon which several openings have now been made, proving the accuracy of these opinions, will be LEASED upon favourable terms to ANY RESPONSIBLE PERSON DESIROUS of WINNING and WORKING the COAL. Coal pits in the immediate neighbourhood are in full work and paying well, and there are indications that the coal beneath the estate in question is of very superior quality. There is a canal running close to the property, and all coal raised can be readily sold at a small distance from the place.—Address, "K. O." MINING JOURNAL office, 26, Fleet-street, London, E.C.

TO CAPITALISTS.—The PROPRIETORS of a COLLIERY in full work, and now producing upwards of 100,000 tons of the best bituminous coal per annum, are DESIROUS of DISPOSING OF the LEASE they hold. The quantity now worked may be doubled without extra expense, if required. The property is situated within 15 miles, by rail, of the port of Cardiff.—Particulars may be obtained of D. RANDALL, Esq., solicitor, Neath.

STEAM COAL COLLIERY TO BE DISPOSED OF, consisting of about NINETY ACRES of COAL LAND, and is also the key to several hundred acres more of the same seam. The coal is 4 ft. thick, of fine hard quality for steam purposes, having a roof of hard and firm shale. The coal is brought out by level, and the railway passes over the land and in connection with the docks at Cardiff. The coal ships well, and will bear knocking about, and is of approved quality. The usual plant, colliers' trams and tools, wrought-iron rails inside and outside the works, with STEAM ENGINE and water machinery, smiths and carpenters' shops, store room, offices, weighing machine, and also siding on the railway.—For further particulars, apply to T. DYE STEEL, Esq., C.E., mining engineer, Newport, Monmouthshire.

CHILTON COLLIERY.—TO BE LET, by the Trustees of the Right Hon. the Earl of Eldon, all the VALUABLE SEAMS of COAL lying under the GREAT and LITTLE CHILTON ESTATES, belonging to the Earl of Eldon, situate near FERRYHILL, in the county of DURHAM, and containing together about 1240 acres.

A shaft has been sunk on the Little Chilton estate, and the upper seams—viz., the "Five Quarter" and "Main Coal"—have been worked under a portion of the estate. The former is found at 40 fms. from the surface 4 ft. 4 in. thick, and the main coal at 52 fms. from the surface 3 ft. 6 in. thick, both seams producing coals well suited for house consumption.

The estates are intersected by the West Hartlepool and North-Eastern Railways, by means of which great facilities are afforded for vending the coal and coke for shipment, and for supplying the great and increasing demand for manufacturing the ironstone now so extensively worked in the adjoining district of Cleveland.

A sufficient number of cottages for the workmen required for an extensive colliery, also agents' houses and offices, have been built on the estate, and are the property of the Earl of Eldon.

The situation of this property, its favourable position as regards the Cleveland ironstone district, and the abundance of coal and limestone underneath the estates, suggest the locality as being well suited for the erection of blast-furnaces and ironworks.

The new leases can have the current going stock belonging to the lessors at a valuation. Further particulars may be obtained on application to Mr. JOHN JOHNSON, mining engineer, Tynemouth, Northumberland.—Tynemouth, March 17, 1864.

MONMOUTHSHIRE.

TO BE LET, an EXTENSIVE COAL FIELD, between Risca and Abergavenny, and within 5½ miles of the port of Newport, containing the well-known RISCA BLACK VEIN, together with all the other seams of coal that have been proved by the Risca and Abergavenny pits.—For particulars, apply to ALEXANDER BASSETT, Esq., C.E., Cardiff.

MINERAL ESTATE, at a delightful part of the YORKSHIRE COAST, between Scarborough and Whitby, TO LET. It abounds with rich SEAMS of IRON ORE, ALUM ROCK, DOGGER or CEMENT STONE, LIAS LIMESTONE, JET, excellent FREESTONE for building purposes, SHALE for terra cotta, FIRE BRICKS, &c. A survey has recently been made for a coast railway to pass through the property, which is eligibly situated for shipping off the minerals. The proprietor will not object to a respectable company, and, if limited, to take shares in the concern. A portion of the old alum works, buildings, cottages, manager's residence, &c., may be had.—Address, "A. B." No. 5, Prospect-place, Peckham Rye, Surrey.

## NICHOLLS, WILLIAMS, AND CO., ENGINEERS,

BEDFORD IRONWORKS, TAVISTOCK.

MANUFACTURERS of STEAM ENGINES of EVERY DESCRIPTION, made of the BEST and NEWEST PRINCIPLES. We beg more especially to call the attention of the public to the manufacture of our BOILERS, which have been tested by most of our leading engineers. PUMP WORK CASTINGS of EVERY DESCRIPTION, both of brass and iron. HAMMERED IRON and HEAVY SHAFTS of ANY SIZE. CHAINS made of the best iron, and warranted. RAILWAY WORKS of EVERY DESCRIPTION.

ALL ORDERS FOR ABROAD RECEIVE their BEST ATTENTION. NICHOLLS, WILLIAMS, and Co. have had 20 years' experience in supplying machinery to foreign mines, and selecting experienced workmen to erect the same, where required.

Messrs. NICHOLLS, WILLIAMS, and Co. have always a LARGE STOCK of SECOND-HAND MINE MATERIALS in stock, and at moderate prices.

MESSRS. W. DERRY AND CO., MINING MATERIAL MERCHANTS, ST. AUSTELL, respectfully inform the mining public that they have constantly ON SALE EVERY DESCRIPTION of MINING PLANT, in STEAM ENGINES, pitwork, and dressing appliances, which they are prepared to offer on very advantageous terms, and such as will especially commend themselves to the miners of new undertakings.—Applications to be addressed as above, or to the engineer of the company, Mr. W. H. GRAY, St. Austell.

Dated St. Austell, August 12, 1863.

WILLIAM MATHEWS, ENGINEER, TAVISTOCK, has FOR SALE:—ONE 30 in. CORNISH PUMPING ENGINE, with BOILER 9 tons; ONE 14 in. HORIZONTAL WHIM ENGINE and cage, with BOILER 4½ tons; TWO 10 horse PORTABLE ENGINES, for winding or pumping; ONE CORNISH CRUSHER; ONE 30 ft. diameter WATER WHEEL, 9 ft. breast, iron cornice, and rings; 60 fms. of 3 in. flat-rods, with pulleys.

TO MINING COMPANIES.—FOR SALE, can be DELIVERED in ANY PORT in WALES, CORNWALL, DEVONSHIRE, or IRELAND:—A CRUSHING MACHINE, consisting of large circular iron pan, with three edge-rollers of cast-iron, having wrought-iron tyres, and weighing about 2 tons each, with vertical shaft and arms, and all the necessary spur and other gearing for driving same from water or steam power. This machine may be used as an amalgamator. If required, a 14 ft. breast wheel for water power may be had to drive this.

A SET of STAMPS, consisting of 24 heads, about 4 cwt. each, with cast-iron barrels, tappets, lifters, frames, and spare heads, with all the necessary gearing.

A SET of AMALGAMATING MACHINES, consisting of pans, with revolving amalgamators, driven by endless bands, with wheels, riggers, brasses, and gearing complete. May be used apart from or in connection with the stamps. If required, a 30 ft. over-hoist wheel for driving the stamps and these amalgamators may be had.

For further particulars, apply to D. D. KYLE, Esq., 6, Victoria-street, Westminster Abbey, S.W.

SPARE MATERIALS FOR SALE, BY PRIVATE CONTRACT, at the CAPPAGH MINE, BALLYDEHOB, COUNTY CORK:—10 ft. 9 in. pumps, 20 ft. 9 in. ditto, 10 ft. 9 in. ditto, 6 and 10 in. plunger poles and cases, 10 and 9 in. stuffing boxes and glands, 12 and 9 in. H and top doorpieces, 10 pairs rod plates, 10 and 9 in. window boxes, quantity of large staves and glands, double winch, lifting screw, shaft gig, horse whim axle, 2 ft. tube of boiler, 2 large tram wagons, 250 fms. 4½ in. round wire rope, flat-rods, whim and other shives, and a quantity of other spare materials. The whole are in excellent condition.—To treat for the same, apply to Capt. WILLIAM EDDY, on the mine; or at the office of the company, 18, New-street, Spring-gardens, London.—Dated Cappagh Mine, April 11, 1864.

HORIZONTAL ENGINES FOR SALE, at very low prices:—One 12 in. cylinder, 24 in. stroke; one 12 in. cylinder, 36 in. stroke; and two 14 in. cylinders, 24 in. stroke. All ready for delivery, and may be had with or without fly-wheels.—Apply to Messrs. E. PAGE and Co., Laurence Pountney-place, Laurence Pountney-hill, Cannon-street, E.C.

FOR SALE, BY PRIVATE CONTRACT, a 22 in. cylinder HORIZONTAL STAMPING ENGINE, with BOILER about 8 tons. A 14 in. cylinder HORIZONTAL WINDING ENGINE, high pressure, 3 ft. stroke, &c., complete, with a BOILER about 5 tons.—For viewing the same, and for price, apply to Mr. W. HANCOCK, auctioneer, St. Austell.

ON SALE, a FIRST-CLASS NEW HORIZONTAL STEAM ENGINE, has 12 in. cylinder, 2 ft. stroke, with strong link motion to valve for reversing. Very suitable for a winding engine. Price, £75. Also, one same size, with governor complete. Price, £75. Other sizes proportionately low.—Apply to Isaac W. BOUTLON, Ashton-under-Lyne.

RAILWAY CARRIAGE COMPANY (LIMITED).

ESTABLISHED 1847.  
OLDBURY WORKS, NEAR BIRMINGHAM.

MANUFACTURERS OF RAILWAY CARRIAGES and WAGONS, and EVERY DESCRIPTION of IRONWORK.

Passenger carriages and wagons built, either for cash or for payment over a period of years.

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CHIEF OFFICES, OLDBURY WORKS, NEAR BIRMINGHAM.

LONDON OFFICES, —6, STOREY'S GATE, GREAT GEORGE STREET, WESTMINSTER.

THE BIRMINGHAM WAGON COMPANY (LIMITED).—Is PREPARED to SUPPLY RAILWAY WAGONS of EVERY DESCRIPTION, capable of carrying 6, 8, or 10 tons, at annual rentals, or for purchase on deferred payment, on advantageous terms.

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OFFICES, —5, NEWHALL STREET, BIRMINGHAM.

BERYSTWITH FOUNDRY COMPANY (LIMITED).—

This company's extensive FOUNDRY and FORGE WORKS are NOW IN FULL OPERATION. MACHINERY and CASTINGS of EVERY DESCRIPTION will be EXECUTED WITH ACCURACY and DISPATCH, under the care of Mr. THOMAS STOCKE, from Messrs. HARVEY and Co., IRONFOUNDERS, Hayle, Cornwall.

FULL PRICES will be GIVEN for OLD CASTINGS, SCRAP IRON, and BRASS delivered at the company's works, opposite the railway station, Aberystwith.

COAL CUTTING MACHINERY.—

The WEST ARDSLEY COMPANY having, by recently patented improvements, perfected their coal cutting machinery, worked by compressed air, are NOW READY to MAKE CONTRACTS for the CONSTRUCTION and USE of their MACHINES.

The results of twelve months' experience in the working of these machines, by the West Ardsley Company, have proved most satisfactory, their use being found to CHEAPEN the COST and IMPROVE the average SIZE of the COAL, to LIGHTEN the LABOUR, and also to MODIFY the SANITARY CONDITION of the MINE.

All communications to be made to Messrs. FIRTH, DONISTHORPE, and BOWER, No. 8, Britannia-street, Leeds.

NOTICE.—The WEST ARDSLEY COMPANY, having reason to believe that their patents are being infringed upon, hereby give notice that they will TAKE LEGAL PROCEEDINGS AGAINST ALL PARTIES who may MAKE FOR SALE, or USE ANY MACHINERY in the construction of which any such INFRINGEMENT is MADE.

EDWARDS'S PATENT MINERAL ORE AND COAL WASHING MACHINE.—This is by far the MOST ECONOMICAL, as well as the MOST PERFECT MACHINE MADE. Each machine is capable of washing 25 to 50 tons per diem, according to quality.—Full particulars, testimonials, &c., may be obtained from E. EDWARDS, Esq., C.E., 1, York-buildings, Adelphi, where a working model may be seen.

Adopted by the Governments of Great Britain, Spain, Denmark, Russia, Brazil, East and West Indies.

EASTON'S PATENT BOILER FLUID, FOR REMOVING AND PREVENTING INCrustation in STEAM BOILERS, LAND and MARINE.

P. S. EASTON and G. SPRINGFIELD, Patentees and Sole Manufacturers,

Or of their Agents in the principal towns of Great Britain and the Colonies.

BEST MANGANESE SPIEGELEISEN DELIVERED at ANY PORT of the UNITED KINGDOM.—For testimonials, and all information, apply to W. BIRD and Co., 2, Lawrence Pountney-hill, London, E.C.

DANIEL COLLINGE and SON'S PATENT SPONGE CLOTHS.

WE HAVE APPOINTED MR. ELLIS LEVER, of this city, SOLE AGENT for the SALE of OUR PATENT SP

## THE MINING SHARE LIST

## BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Dividends Per Share.	Last paid
1200 Aldersley Edge (cop.), Cheshire [L.]	10 0 0 ..	—	9 13 0 ..	0 15 0 —Feb.	1864	
4000 Badford United (copper), Tavistock [L.]	2 6 8 ..	8 ..	2 3% 2%	13 6 0 ..	0 2 6 —April	1864
1245 Boscombe (tin, copper), St. Just	6 12 0 ..	—	1 0 0 ..	0 5 0 —Feb.	1864	
2000 Botallack (tin, copper), St. Just	91 5 0 ..	—	474 18 0 ..	5 0 0 —Feb.	1864	
5000 Bronyford (lead), Cardigan [L. £5]	2 7 5 ..	—	0 16 6 ..	0 2 6 —Jan.	1864	
916 Cargill (silver-lead), Newlyn	15 5 7 ..	38 ..	37 38 ..	7 5 0 ..	1 5 0 —Feb.	1864
2300 Clifford Amalgamated (cop.), Gwen	30 0 0 ..	36 ..	33% 34%	30 18 6 ..	0 10 0 —Feb.	1864
12000 Copper Miners of England	25 0 0 ..	—	7% per cent.	—Half-yearly.	1864	
40000 Ditto ditto (stock)	100 0 0 ..	—	1 percent.	—Half-yearly.	1864	
867 Cwm Eifin (lead) Cardiganshire [L.]	7 10 0 ..	—	11 8 0 ..	0 15 0 —Mar.	1864	
132 Gwynedd (lead), Cardiganshire [L.]	60 0 0 ..	—	263 10 0 ..	4 0 0 —Mar.	1864	
1024 Devon Gt. Con. (cop.), Tavistock [S.E.]	1 0 0 ..	500	550 560 ..	901 0 0 ..	10 0 0 —Mar.	1864
358 Dolcoath (copper, tin), Camborne	128 17 6 ..	—	756 10 0 ..	8 0 0 —April	1864	
12000 Drake Walls (tin, copper), Calstock	2 1 0 ..	39 ..	37 39 ..	0 18 0 ..	0 1 6 —May	1864
812 East Bassett (cop.), Redruth [S.E.]	20 10 0 ..	69 ..	66 68 ..	119 0 0 ..	2 0 0 —Mar.	1864
6144 East Cadron (copper), St. Cleer [S.E.]	2 14 6 ..	30% 31 ..	10 5 0 ..	1 2 6 —April	1864	
300 East Darren (lead), Cardiganshire [S.E.]	32 0 0 ..	—	98 10 0 ..	2 0 0 —Mar.	1864	
128 East Pool (tin, copper), Pool, Illogan	24 5 0 ..	—	357 19 0 ..	7 10 0 —Feb.	1864	
1906 East Wheal Lovell (tin), Wendron	2 13 6 ..	12% 17 ..	1 0 0 ..	0 7 6 —Jan.	1864	
2800 Foxdale (lead) Isle of Man [L.]	25 0 0 ..	—	63 0 0 ..	1 0 0 —Feb.	1864	
8000 Frank Mills (lead), Christow	3 18 6 ..	—	1 0 6 ..	3 0 0 —Feb.	1864	
12500 Great Laxey (lead), Isle of Man [L.]	4 0 0 ..	6 ..	0 6 0 ..	0 6 0 —Mar.	1864	
1788 Great Wheal Fortune (tin), Breage	18 6 0 ..	17 ..	15% 16% ..	5 15 2 ..	0 10 0 —Nov.	1864
8908 Great Wh. Vor (tin, lead), Helston [S.E.]	40 0 0 ..	36 ..	34 35 ..	3 7 6 ..	0 10 0 —Mar.	1864
119 Great Work (tin), Germoe	100 0 0 ..	—	5 0 0 ..	5 0 0 —Feb.	1864	
1024 Herdickson (ld.), near Liskeard [S.E.]	8 10 0 ..	—	28 0 0 ..	1 15 0 —Feb.	1864	
400 Lisburne (lead), Cardiganshire, Wales [L.]	18 0 0 ..	—	418 10 0 ..	3 0 0 —Mar.	1864	
9000 Marks Valley (copper), Caradon	10 6 ..	6 ..	51% 6 ..	2 13 0 ..	0 1 0 —Feb.	1864
1800 Minera Mining Co. [L.], Wrexham 20 0 ..	—	—	135 18 0 ..	7 0 ..	0 1 0 —Feb.	1864
9000 Mining Co. of Ireland (cop., lead, coal)	7 0 0 ..	—	29% ..	18 7 4 ..	0 9 7 —July	1863
5000 Mwyndy (iron ore) [L. £4] [S.E.]	2 10 0 ..	—	0 2 0 ..	0 2 0 —Mar.	1864	
250 Nanty Mine (lead), Montgomery	20 0 0 ..	—	6 0 0 ..	1 0 0 —Mar.	1864	
6000 New Birch Tor and Vitifer Cons. (tin)	1 6 8 ..	3 ..	23% 3 ..	0 8 0 ..	0 2 6 —April	1864
8236 North Treskerby (copper), St. Agnes	1 9 0 ..	31% 34 ..	0 13 0 ..	2 2 6 —Feb.	1864	
6400 Par Consols (cop.), St. Blazey [S.E.]	1 2 5 ..	—	86 19 0 ..	2 6 0 ..	0 1 0 —Mar.	1864
300 Parys Mines (copper), Anglesey [L.]	50 0 0 ..	—	9210 0 ..	10 0 ..	0 1 0 —Jan.	1864
1773 Pether (tin), St. Agnes	15 0 0 ..	—	7 19 6 ..	0 10 0 —Nov.	1863	
512 Pether (tin), St. Agnes	8 0 0 ..	—	1 0 0 ..	1 0 0 —July	1863	
1023 Providence (tin), Uly Loantek [S.E.]	10 6 7 ..	43 ..	41 42 ..	72 5 0 ..	1 5 0 —Feb.	1864
6000 Rosewall Hill and Ramon United	2 16 0 ..	—	9 10 0 ..	0 1 6 —June	1863	
812 South Cadron (cop.), St. Cleer [S.E.]	1 5 0 ..	460 ..	455 465 ..	432 10 0 ..	6 0 0 —Mar.	1864
512 South Toquie (cop.), Redruth, Cornwall	8 0 0 ..	—	37% 40 ..	74 10 0 ..	1 0 0 —May	1864
496 S. Wh. France (cop.), Illogan [S.E.]	18 19 0 ..	—	370 18 0 ..	1 0 0 —Nov.	1864	
4000 S. Day United (tin), Redruth	14 0 0 ..	10% ..	0 6 0 ..	0 5 0 ..	0 1 0 —Mar.	1864
940 S. Ives Consols (tin), St. Ives	8 0 0 ..	—	489 10 0 ..	1 0 0 —Feb.	1864	
8000 Tincroft (cop., tin), Pool, Illogan [S.E.]	9 0 0 ..	19 ..	17 19 ..	14 8 6 ..	0 10 0 —Mar.	1864
4200 Vigra and Clogau (cop.) [L. £6] ..	4 0 0 ..	38 ..	5 8 6 ..	1 13 0 —Mar.	1864	
6000 West Bassett (copper), Illogan [S.E.]	1 10 0 ..	—	25 3 0 ..	0 5 0 —Mar.	1864	
3000 W. Chiverton (ld.), Perranzabuloe [S.E.]	—	82 ..	77 80 ..	1 10 0 ..	0 15 0 —Jan.	1864
256 West Damsel (copper), Gwennap ..	38 10 0 ..	—	48 0 0 ..	1 0 0 —Jan.	1864	
400 W. Wh. Seton (cop.), Camborne [L.]	47 16 0 ..	210 ..	210 220 ..	405 0 0 ..	4 0 0 —April	1864
512 Wheal Bassett (copper), Illogan [S.E.]	5 2 6 ..	90 ..	85 90 ..	598 10 0 ..	1 0 0 —April	1864
1000 Wheal Bassett and Grysil (tin) ..	7 0 0 ..	—	14 15 ..	3 0 0 ..	0 10 0 —Oct.	1863
1024 Wheal Grylls (tin), Perranporth	2 4 0 ..	27 ..	6 2 0 ..	1 0 0 —Sept.	1863	
512 Wheal Jane (silver-lead), Kew	3 10 0 ..	—	14 0 0 ..	0 10 0 —Mar.	1864	
4295 Wheal Kitty (tin), St. Agnes	5 4 6 ..	7% 7% ..	1 8 6 ..	0 5 0 —Jan.	1863	
1024 Wheal Kitty (tin), Uly Loantek [S.E.]	2 0 6 ..	14 ..	9 15 0 ..	0 7 6 —April	1864	
896 Wh. Margaret (tin), Uly Loantek [S.E.]	9 17 6 ..	—	76 5 0 ..	1 0 0 —May	1864	
1024 Wh. Mary Ann (ld.), Menheniot [S.E.]	8 0 0 ..	14 ..	57 17 6 ..	0 10 0 —Mar.	1864	
80 Wh. Owles (tin), St. Just, Cornwall	70 0 0 ..	—	338 3 0 ..	5 0 0 —Feb.	1864	
396 Whel Seton (tin, copper), Camborne	58 10 0 ..	200 ..	1974 2024 ..	170 15 0 ..	4 0 0 —April	1864
1040 Wh. Trelawny (ld.), Liskeard [S.E.]	15 7 0 ..	24 ..	24 9 0 ..	0 15 0 ..	0 5 0 —Nov.	1863
2044 Wh. Tremayne (tin), Gwinear	6 11 3 ..	—	0 15 0 ..	0 5 0 —Aug.	1863	
7060 Wicklow (copper) [L.]	210 ..	—	12% ..	14 5 0 ..	1 6 0 —Aug.	1863
1023 Wimbley (tin), Lelant	36 2 6 ..	—	0 5 0 ..	0 5 0 —Aug.	1863	

\* Dividends paid every two months. † Dividends paid every three months.

## BRITISH MINES WITH DIVIDENDS IN ABEYANCE.

240 Boscombe (tin), St. Just	20 10 0 ..	—	36 10 0 ..	1 0 0 —Mar.	1862
1800 Carn Bras (copper, tin), Illogan ..	15 0 0 ..	—	278 10 0 ..	2 0 0 —Feb.	1862
3000 Chiverton (lead), Perranzabuloe [S.E.]	5 0 0 ..	12% ..	85 0 0 ..	2 0 0 —June	1857
266 Condurrow (cop., tin), Camborne	35 0 0 ..	—	1 7 0 ..	0 7 0 —May	1862
2450 Cook's Kitchen (copper), Illogan ..	17 15 9 ..	—	2 7 6 ..	— Sept.	1862
1024 Copper Hill (copper), Redruth	12 0 0 ..	—	7 12 0 ..	0 4 0 —July	1862
1055 Croddac Moor (copper), St. Cleer ..	8 0 0 ..	—	147 0 0 ..	5 0 0 —June	1862
280 Derwent Mines (sil., lead), Durham ..	300 0 0 ..	—	0 10 0 ..	0 2 6 —Feb.	1859
4076 Devon and Cornwall (cop.), Tavistock	5 16 3 ..	—	0 10 0 ..	0 2 6 —Feb.	1859
8000 Dwyngwyr (lead), Wales	12 6 6 ..	—	0 17 6 ..	0 2 6 —Jan.	1863
940 Fowey Consols (copper), Twardreath ..	4 0 0 ..	—	41 9 0 ..	2 6 —June	1862
6000 Great South Tolgas (S.E.), Redruth	0 14 6 ..	3% ..	7 18 6 ..	0 5 0 —Dec.	1861
2400 Great South Tolgas (S.E.), Redruth	15 13 0 ..	—	8 15 0 ..	1 0 0 —Jan.	1861
1024 Great South Tolgas (Citters' Adit), St. Just ..	0 2 0 ..	—	0 3 0 ..	1 0 0 —Mar.	1862
160 Levant (copper, tin), St. Just	2 10 0 ..	—	1091 0 ..	5 0 0 —May	1860
640 Mount Pleasant (lead), Mold ..	4 0 0 ..	—	18 18 1 ..	0 7 6 —Aug.	1862
5000 Osread (lead), Flintshire ..	0 0 8 ..	—	0 10 4 ..	0 8 8 —Mar.	1862
5000 South Exmouth (lead), Christow ..	1 5 0 ..	—	0 5 0 ..	0 5 0 —Dec.	1862
280 Spearey Consols (tin), St. Ives ..	31 17 9 ..	—	9 12 0 ..	1 0 0 —June	1862
872 Trelyon Consols (tin), St. Ives ..	12 10 0 ..	—	7 0 0 ..	0 10 0 —Sept.	1860
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